The Bradshaw Lecture

ON

A REVIEW OF SURGERY DURING THE PAST 100 YEARS.

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MR. VICE-PRESIDENT, LADIES, AND GENTLEMEN,—I propose to-day to devote this lecture to a review of surgery during the past 100 years, seeing that this year marks the close of a century since the first Charter was granted to this College in 1800. I can scarcely hope to make such a review instructive to the older members of the profession who may have honoured me with their presence to-day, but for the younger members who have grown up under the present *régime* of surgery I hope to be able to suggest subjects for reflection, and perhaps by considering the surgery of the past to aid in preventing some retrogression in the practice of the future. Recognising the revolution in surgery which the last 30 years have brought about, knowing the immense number of new observations, as well as of new methods of practice which are introduced to our notice every year, it cannot be without value that we should occasionally pause in our career, carefully compare the past with the present, take stock of old methods as opposed to new, and see what in the newer teachings has come to stay and what will be probably as fugitive as the past.

The memory of no surgeon at present living is long enough to carry us back to the surgery of the beginning of the present century. My own personal knowledge of it is no more than 40 years old, when I first entered the profession. In making this comparison I have had therefore to apply to the written works of the great surgeons of the past. In examining these works, so familiar to our forefathers, I have found that they are of very unequal value for my purpose. Some treat their subjects didactically—just as we should find in the present day in a student's "System of Surgery"; others, without attempting to go over the whole ground of surgery, narrate their own personal experiences and observations in those subjects which have come particularly under their notice. These latter I have found of the greatest value. Let me say at once that amongst continental surgeons I have found the "Memoirs of Military Surgery" of Baron Larrey of the greatest living interest and of the greatest value to compare with present surgery. And I have specially chosen the edition of his works published in 1812, before the close of the great Napoleonic wars, as best presenting a mirror of surgical practice in Europe at a time when there was least communication with England—at a time, therefore, when English surgery would be least influenced by continental practice and when, *vice versâ*, continental practice would be least influenced by English. Amongst English surgeons I have specially avoided reference to our own Hunter, because his works are the subject of special illustration in this College every two years. The English book which I think answers my purpose best is the "Chirurgical Works of Percivall Pott," of which I have chosen the edition of 1808 by Sir James Earle. It is true that Pott died in December, 1788, rather before the centennial period, but he occupied such a prominent position in surgery that his teaching and practice exercised a great influence on English surgery long after his death. The character of his writings also, offers a better mirror of the surgery of the beginning of this century than most of those of his contemporaries.

When we take a general review of surgery in the past 100 years, the two discoveries which stand out pre-eminent before all others, both in their power of saving life and of diminishing the sum of human misery, are: (1) the discovery of anæsthesia, both general and local; and (2) the antiseptic treatment of wounds, which we owe so largely to the discoveries of Pasteur in France and to those of Lister in England, especially as regards the latter, in its practical introduction to the every-day work of surgery. A third element of scarcely less importance, is the introduction into practice of a host of lesser instruments, such as the microscope, the ophthalmoscope, &c. These may not have produced such a vivid and startling effect on treatment as the first-mentioned two discoveries, but when looked into their effect in perfecting diagnosis, and thus making a rational method of treatment possible, must be recognised as enormous. The fourth great introduction of the century, and of a very recent part of it, is the use of bacteriological research in the diagnosis and treatment of disease, the latter mainly through the various forms of serum treatment. The progress of surgery during the last century has been so rapid that I cannot hope to deal with more than two or three subjects, and the classical subject of amputations is the first upon which I propose to say something.

AMPUTATIONS.

At the present time, when the success of all amputations is so great, when our senior students and the younger members of the profession scarcely ever see a person die as a result of the operation (unless performed when the patient is *in extremis* from injury or disease), it is scarcely to be credited how our forefathers looked upon these operations. It would excite a smile now were anyone to doubt the advisability of amputation for a diseased joint beyond the hope of recovery by other means, or for a limb crushed in a railway accident. And yet we find that it was with very different eyes that our grandparents looked upon these operations. One of the treatises which Percivall Pott found it necessary to write in the latter part of the last century, about eight or nine years before his death, was entitled, "Remarks on the Necessity and Propriety of the Operation of Amputation in Certain Cases and under Certain Circumstances." This was in reply to a book written by Herr Bilguer, a prominent Prussian army surgeon, who had advocated doing away with amputation as a method of treatment almost altogether. This view was still further supported by a M. Tissot, who wrote a pamphlet, "Sur l'Inutilité de l'Amputation des Membres," in which he sets aside the operation as useless, speaks of it in the most opprobrious terms, is shocked at the horror of it, and "exhorts surgeons to abandon the murderous and cruel method of amputation." These works were both translated into English and dedicated to Sir John Pringle. They therefore probably exercised a very definite effect on English surgery; also on French practice for they are more than once referred to by Larrey. Thus in one place[1] he opposes strongly the views of "Bilguer et ses partisans." And in another place,[2] speaking of amputations generally, he says: "Cependant des chirurgiens et nos contemporains qualifient cette opération de *cruelle* et *barbare*." What a lurid light does this shed on the fatality attending the methods of amputation adopted at this time! No doubt the views expressed in these two books were not commonly accepted, but when we find two continental surgeons of prominent position writing books to express such views and an English surgeon of note like Pott finding it necessary to write in order to controvert them, we may be pretty certain that the methods of operating and the results attending the operations were not such as to commend themselves to all minds—indeed, there is evidence to show either that these writings or the acknowledged risk of these operations produced a certain definite effect on the surgical practice of the day, indisposing surgeons to undertake amputations in any but the most obvious cases. With regard to this there is a curious bit of evidence contained in Baron Larrey's works. Larrey himself was a keen supporter of primary amputation of a limb when hopelessly injured. He would do it in the "flying ambulances," which must be always associated with his name, or even on the field of battle itself. And it must be admitted that he was a most successful operator in this way. At the close of the Egyptian campaign, and after the surrender of Alexandria to the English and Turkish armies in October, 1801, Larrey visited the English ambulances with the English Inspector-General, "who had the medical and administrative superintendence of all the health departments, without any intermediary between him and the general-in-chief." These are his

[1] Larrey's Memoirs, vol. ii., pp. 263, 264.
[2] Ibid., vol. iii., p. 353.

words: "These ambulances were well arranged and provided with all necessary appliances, and medical treatment appeared to me to be carried out in them with success: but I was very much astonished to find in them only three amputations in process of healing, although they had done amputation in a large number of cases." He adds with a little pardonable patriotic chuckle: "This proves the superiority of French surgery over that of other nations, even the most civilised."[3]

We need not, however, go so far back as this to get an idea of the fatality of all large amputations in English practice. The large proportion of deaths which followed amputation through the thigh is within the memory of all the older members of the profession. Indeed, in no department of surgery is the beneficent result of Lord Lister's introduction of antiseptic surgery more strikingly shown than in the vastly diminished mortality after amputation—I might almost say in the abolition of fatal results after it. Let us turn to any of the ordinary text-books in surgery in use 35 years ago. Thus in Erichsen's Surgery[4] we have the following as giving the results of amputations in the London and provincial hospitals for three years:—

Of the thigh for injury	61·0	per cent. mortality.
Ditto for disease	23·4	,, ,,
Of the leg for injury	40·0	,, ,,
Ditto for disease	25·4	,, ,,

Again at University College Hospital the following are the statistics given:—

Of the thigh for injury	67·8	per cent. mortality.
Ditto for disease	18·7	,, ,,
Of the leg and foot for injury	20·8	,, ,,
Ditto for disease	15·5	,, ,,
Of the shoulder and arm for injury ...	36·3	,, ,,
Ditto for disease...	27·7	,, ,,
Of the forearm for injury	0·0	,, ,,
Ditto for disease	6·2	,, ,,

Looking at the matter from quite a different point of view, after the battle of Fontenoy in 1745 the French Royal Academy of Surgery offered a prize for an essay on the best method of performing and treating amputations. The prize was adjudged to Mons. Faure, who states in his essay that of 300 amputations of all kinds after the battle only 30 were successful—i.e., only 10 per cent. Larrey contrasts this with his own success in the Napoleonic campaigns, in which he says he saved three-fourths of the cases—i.e., 75 per cent. Even this mortality—viz., 25 per cent.—in the hands of the most successful operator of the day is a large one for amputations of all kinds. Against these statistics I think it is scarcely necessary to place any belonging to the present time. The facts relating to the present small rate of mortality after amputations are present to us all. As far as my own experience goes I may say that it is many years since I lost an amputation. This is true even including the large amputations at the hip-joint. About 10 or 12 years ago I lost one case of amputation at the hip from shock in an adult for tumour of the thigh; and even this I think would have been saved at the present time, with our greater knowledge of means to combat this risk (I refer to saline injections and the use of strychnine subcutaneously). And I have lost two cases of amputation for gangrene, either occurring in diabetes or from senile atheromatous changes in the arteries. These, however, can scarcely be fairly considered as deaths due to the operation. Such is my own experience. I do not suppose that that of other surgeons of the present day is in any way less favourable than this.

The great fatality of 50 years ago after the larger amputations was, as we all now recognise, mainly due to septicæmia and pyæmia. The recognition of these quite certainly as bacterial diseases by the main body of the profession can only be dated back about 30 years. About this time I remember well the house surgeon of a large provincial hospital in which there were very many machinery accident cases assuring me that though septicæmia and pyæmia were much talked about in London as causes of death after amputations, yet that he had never seen a case of either disease and that they did not occur in his own hospital in the purer air of the country. His statement—a rather common one to make at the time—was confirmed by two members of his own staff, and a similar statement was made to me by the members of the staff of more than one other provincial hospital. On careful inquiry, however, in these places, in the first mentioned one more especially, I found the general mortality in patients admitted for accidents simply appalling, very much greater than anything we saw in metropolitan hospitals. This mortality was greatly due to traumatic gangrene, many of the cases of which were absolutely typical, killing the patients in from two to three days after it had manifested itself. A secondary cause of death in these hospitals was acute erysipelas, which broke out again and again, even after the most complete clearance of the wards, and their cleansing by the most approved methods. It may be doubted then whether septicæmia was truly absent from these hospitals, though very probably the pathological manifestations were at that time unknown to the members of their respective staffs. It will be remembered also by the older members of our profession that just about this time the teachings of the so-called "conservative surgery" school were most popular in the profession—teachings by which it was held to be wiser surgery to save a limb almost at any price rather than to sacrifice it. On inquiry I found that these principles of conservative surgery were most religiously accepted and acted upon at the hospitals in question; that it was the common practice when a patient was brought into hospital with a limb badly injured from a machinery accident, to put it into splints in order to see whether it could not be saved. In other words, that very few primary amputations were done and that secondary amputation was considered the better practice. The great fatality from traumatic gangrene in these hospitals took place in the period before the secondary amputation would have been done. As a result, very few amputations (considering the number of severe accident cases admitted) were performed, and the deaths were attributed directly to the severity of the accident. In this way it is certain that the dictates of conservative surgery were at that time responsible for very many deaths. Larrey from his military experience early learned the lesson of the greater safety of primary amputations, and he returns to this subject again and again in his works. Thus he gives a proportion of success of 11 amputations out of 12 at the shoulder-joint after each of the great battles of Smolensk and Moskowa in the fatal Russian campaign. These patients were sent back to Germany and France before the horrors of the great retreat commenced. The amputations were often done on the battlefield itself and sometimes under the enemy's fire, so that there is no doubt what he means by "primary amputation." And again, after the battle of Lützen in the following year out of 18 amputations at the shoulder-joint only three patients died. Success such as this, considering the severe nature of the cases operated upon, we should not despise even now, with all our antiseptic or aseptic precautions and with all our operating appliances. No doubt in the present day the principles of conservative surgery are capable of being applied successfully in a very much larger number of cases than formerly. But it is probably none the less true now than then—though we may tend to lose sight of the fact—that where the injury is *very* severe primary amputation is safer than secondary and that it is bad policy to delay amputating a very badly injured limb on the chance of something turning up by which it may be saved.

Another element in the treatment of amputations in which the pendulum has swung curiously backwards and forwards more than once in the past century is in the method of union of the flaps. With regard to this let me quote a very suggestive paragraph contained in the introduction to the first volume of Larrey's Memoirs. I shall translate rather literally that it may not lose its meaning. This is what he says: "I invite young surgeons to read without prejudice and to study with care, in my article on Operative Procedure, my reflexions upon the inconveniences of immediate union and that by first intention, of the flaps in primary and secondary amputation. This opinion is based upon 25 years of practice and upon a great number of observations that I have been able to make amongst foreign nations where this procedure has been always more or less in favour. I am also glad to find myself in accord in the opinion I have expressed in this respect for many years with M. le Professeur Pelletan, one of the most distinguished members of the old Royal Academy of Surgery."[5]

[3] Ibid., vol. ii., p. 294.
[4] Fourth Edition, 1864, p. 30.
[5] Larrey's Memoirs, vol. i., Introduction, pp. xx.-xxi.

English surgery has always prided itself upon its attempts to secure primary union of wounds, and it is probable that we are one of the "foreign nations" referred to in this paragraph. But from this and many other paragraphs scattered about in his writings, and in those of others, I think we shall do rightly in concluding that not only amongst English surgeons, but also amongst those of other countries, France not excepted, attempts at primary union formed the ordinary established course of practice at the end of the last century and the beginning of this, and that Baron Larrey and M. Pelletan considered that they were really striking out a new course in practice when they advised that *from the first* no attempt should be made at obtaining primary union (of course at all times healing of amputations by granulation was common enough in *failed* cases of attempted primary union—but this is not what I am now speaking about). The line of practice thus advised became the recognised and established one, at any rate in French surgery, down to a very recent period. Thus, at the time when I was working in the Paris schools in 1866–67, I scarcely saw any attempts at primary union in amputations by the great surgeons then holding the larger hospital appointments. The almost invariable practice, after ligaturing the vessels, was to bathe the flaps with some lotion more or less antiseptic (spirit lotion was a favourite material when I was there), then to place a wad of charpie between the flaps, and to bring them together with rollers. Nor was this line of treatment without its justification. Considering the crowded state of the older French hospitals and the mal-hygienic conditions under which they were conducted—e.g., the old Hôtel Dieu, which was still existing when I was a student, had its post-mortem room under the same roof as the general wards, and the effluvium therefrom penetrated quite freely into the corridors and staircases into which some of the wards opened; of this I was myself again and again a witness—considering, then, these mal-hygienic conditions, the results of French surgery were not so bad as one might have reasonably imagined. Deeply impressed, as I then was, with the importance of the English attempts at obtaining primary union after amputation, and also certain of the greater sweetness of our English hospitals, I thought that statistics would show how great the superiority was in the results obtained. Through the late Dr. Steele I obtained the means of studying the mortality of the Parisian hospitals after the various operations therein practised, and comparing them with the English. What was my astonishment when I found that the success of English amputations was not anything like so pre-eminent as I had considered likely beforehand. The conclusion I came to, in comparing similar amputations for similar diseases was that we were more successful, but that the greater success was not in any way proportionate to the undoubted better hygienic conditions of our own hospitals. Indeed, the increased success might be merely a question of latitude, for it seemed within certain limits as if more northerly places had with the same conditions a higher measure of success than the more southerly. Thus at that time Edinburgh claimed a higher measure of success in amputations than London, just as we did over Paris, and Paris over many of the hospitals of Southern European capitals. Clearly, then, the mal-hygienic condition of the French hospitals and the absence of attempts at obtaining primary union did not exercise such a prejudicial influence as I had anticipated.

EPIDEMICS.

Leaving the subject of amputations, I shall now turn to quite another page in the surgery of 100 years ago. I have been much struck in studying the surgical writings of this period with the extreme uncertainty which prevailed amongst even the best-instructed surgeons as regards the exact nature of certain epidemics which prevailed in different parts of the continent. Such uncertainty may probably be paralleled in the present day by much of the writing and much of the teaching as regards certain forms of epidemic disease oftentimes prevalent amongst us. I would instance some of the epidemics of influenza which have affected these islands and the continent so many times during the last few years. I will venture to say that there is no certain definite unmistakable point known about influenza upon which we can all rest sure that any case is one of this disease and not one of its prototypes or colourable imitations. Thus some rest their diagnosis upon the pain in the back and great depression both of pulse and temperature in the first stage of the disease; some upon an immediate great rise of temperature, with or without following catarrhal symptoms; some upon the catarrhal condition of the fauces and posterior nares with other symptoms; while others regard all cases of epidemic nasal catarrh in the present day as influenzal. And a few—a very select few—believe that they have discovered the special bacillus of influenza, and that no case of catarrh and no case of what I may call "epidemic shock" (the class first mentioned in the above category) is truly influenza, unless the bacillus can be shown to be present in it. But even from this select few I have never yet heard that they have made the recognition of the bacillus such a positive thing, so easy to cultivate and to demonstrate, as to be a possible mode of diagnosis to practitioners. For myself I have never yet seen any practical demonstration of the bacillus which could be available for purposes of diagnosis. Hence it is that we have probably many diseases mixed up together in these epidemics of influenza; hence that these epidemics so curiously differ from each other in character in different years and seasons. But nevertheless with the "select few" I feel most in sympathy, and I would fain hope that they in the future will prove to be right, and that by new methods, they will not only be able to prove the existence of the bacillus in every case, but that they will render its demonstration so easy that it will be capable of being used as a means of diagnosis and thus the character of these epidemics be cleared up.

Such uncertainty as we are still in, as regards a disease like influenza, affected our forefathers at the beginning of this century as regards many epidemic diseases. They, like ourselves, were very sure that they knew what they were talking of, whereas, as a matter of fact, they knew little of the cause of these epidemics, little of the disease itself beyond a group of symptoms, and the way they were followed by death or recovery. I will instance what I mean by taking as an example the various epidemics of anthrax-charbon which affected various parts of the continent in the early part of this century.

Epidemics of anthrax-charbon.—Up to about 50 years ago the exact nature of this disease was quite unknown beyond the symptoms which it produced, and its extreme infectivity and fatality, and the fact that the infection was derived from animals. In 1849 Pollender and in 1850 Rayer and Davaine described the bacteria which they found in the blood of animals dying from splenic fever; and in 1857 Brauell found these same organisms in the blood of a man suffering from anthrax. These were the foundations of our present knowledge of the disease. Guided by Pasteur's fermentation discoveries, Davaine, and later (in 1876) Koch, furnished absolutely certain proof of the nature of the disease in man. It did not, however, become common professional knowledge in this country immediately. At Guy's Hospital we owe its exact recognition to my colleague, Mr. Davies-Colley. We now know it as a perfectly definite bacterial disease characterised, as far as its early external manifestations go, by a raised reddened papule of the skin with a dark sloughy or almost gangrenous spot in the centre and surrounded by a ring of vesicles, the serum of which nearly always contains abundantly the bacillus anthracis, the microscopical staining and demonstration of which is a perfectly easy and definite process. It is in this respect that, as regards this disease, the great advance in our knowledge and practice in this century has taken place. Recognising the centre of infection, the serum from the vesicles is examined bacteriologically, and the bacillus demonstrated. In animals the blood becomes very early affected (the blood in a case of splenic fever swarms with organisms), but in man this infection does not so readily take place. After an inoculation on the skin the human tissue seems for a time at any rate to raise some impediment to the dissemination of the bacillus. The condition is therefore *local* for a time, and during this period the tubercle of infection with the surrounding vesicles is cut out, some escharotic applied to the base, and to the skin immediately around it, and thus the further progress of the malady is suddenly cut short. No doubt there are other cases (fewer in proportion) where this impediment to general infection does not exist and where general inflammatory œdema and great glandular infiltration very quickly supervene upon the infection. For reasons which I need not enter into now the treatment by excision and cauterisation is not very much less successful in these cases than in the former. These patients pass through a period of great

constitutional disturbance, and if weakly or suffering from some visceral disease they may succumb, but otherwise they generally get better in the end.

In another form, the "wool-sorter's disease," the bacilli are received into the system as dust through the lungs or alimentary canal or both. As in plague, when the poison is absorbed in this way the external manifestations will at first be absent and they may be absent to the end. In such cases the diagnosis is rendered more difficult in the early stage. But this is of less importance because nothing except medicinal treatment can be done in them. In the later stages, if they survive the cyanosed condition so frequently present, the diagnosis may be made by the appearance of the external charbon if it occurs, and if not by the presence of the bacilli in the sweat, fæces, urine, or sputum in accordance with the part of the system affected.

Such, then, is the positive knowledge which scientific observation has conferred upon us at the close of this century, leading to far greater success in treating this disease than could ever have been the case before. No such knowledge, no such positive assurance existed at the beginning of this century. Let us see to what this absence of knowledge led. The pages of Larrey in many places unfold a most instructive tale. His first acquaintance with the disease was after his return to Paris from his Newfoundland voyage in 1789.[6] He there saw the wife of a butcher, attacked by charbon, infected from an ox, which had been bought at market by her husband. The husband had recognised the disease and killed the animal at once to save the meat, but without recognising the risks he ran by so doing. One of his assistants, aged 27 years, was attacked by the disease after skinning the animal. A surgeon was called in to him; his treatment was emollient poultices, two bleedings, refreshing drinks, and baths. But in spite of it the patient died in about a week. Another assistant died also very rapidly from a pustule on the neck. The wife was then attacked, and as by this time the disease had caused a panic she was abandoned by everybody about her. Under these circumstances Larrey was called in to attend her. After a consultation it was agreed to cut away as much of the gangrenous and affected tissue as possible, and to apply to the remaining tissues "caustic liquids" (what these were is not stated). The patient was then in an extremely dangerous condition; everything pointed to speedy death. However, in the course of the 24 hours *after* the operation there was a great amelioration of the symptoms, and the patient ultimately recovered after a six-weeks' illness. A third and a fourth assistant in the same shop also became infected. Treated "*on the same plan*" (presumably—though not positively so stated—by excision and the caustic applications) at an early stage of the disease they both also recovered.

We seem here on the eve of a great discovery. Five cases of undoubted malignant pustule (for that they were such nobody can entertain a reasonable doubt); two treated on the old system by "emollient poultices," &c.—both fatal; three more treated on the plan which is now recognised as scientifically the *right* one—all these recovering. That these cases made a deep impression on Larrey's mind is shown by the careful record he preserves of them when as yet he is only 23 years of age. Surely the observation and recording of such facts will necessarily lead to the correct treatment of all these cases subsequently. But it is not so; the lesson becomes speedily lost, and it is interesting to trace the reason why, with the facts so completely under his hands, he failed to grasp their true significance. The reason is that he had no absolute means of diagnosis to make him *quite certain* in subsequent epidemics that he was really dealing with the same disease. He did not know that it was a bacillary disease; consequently he knew nothing about the staining and microscopical recognition of the organism. We know that it was not till long after that the microscope took its place as an important factor in diagnosis. The consequence is that in the later epidemics he mixes up dissimilar cases, as may be seen in his account of the outbreak of anthrax about Toulon in 1795; and after he had seen the great epidemic of plague in Egypt in the years 1798 to 1801 he confuses between the two diseases, seeing much similarity between them, and is evidently at one time in doubt whether anthrax in South Europe may not be a modified form of oriental plague. After seeing the epidemic (of anthrax) about Toulon in 1795 he wrote a memoir upon it, which is incorporated into his book. Some of the statements contained in this memoir are so interesting that I wish to quote them. Almost at the beginning he says[7] that "although the symptoms of anthrax have much analogy with plague the charbons which accompany these two diseases differ from each other in their progress. The charbon of plague declares itself suddenly—very often without the patient experiencing the least feeling of pain or itching; and its development is so rapid that it may arrive at its last stage before the patient perceives it. In addition, the plague fever, *of which the pustule is only one of the effects*, has a character peculiar to itself, as we shall see in the description of the plague of Egypt." In this quotation we see that he clearly distinguishes in his own mind between the two diseases and gives a clinical distinction between them which is probably as good as any that could be given in those days. Later, however, the differences become much more confused, with the result that the treatment also becomes equally mixed. These differences, he says, seem to call for a description of anthrax in the form that shows itself so frequently in Provence, and in other southern countries of Europe. There follows a description of the local forms of anthrax, such as occurs from infection through the skin. This is so good that I translate parts of it.[8] "This malady commences by a feeling of disagreeable itching, with shooting pains, which are felt in the spot where the tumour is going to form. This spot reddens and swells lightly, which makes the patient think he has been stung by an insect or a reptile [*sic*—by which he probably means some crawling thing. Note here that he evidently, when he wrote this, disbelieves in the disease being produced by inoculation in this way]. Soon after one or more yellowish vesicles appear on the painful spot; these are full of irritating serum of an orange colour. The tissue of the surrounding skin becomes congested and swollen, forming a kind of aureole, at first dark-red, but which soon becomes livid, and nearly always produces vesicles similar to the first. The congestion spreads more or less to the circumference. The vesicles which occupy the centre of the tumour burst and allow the fluid they contain to escape. The cutis, which is now uncovered, becomes black, dries, hardens, and takes on the aspect of a bit of burnt leather. This part adheres strongly to the subjacent parts, and thus becomes depressed, while the circumferential tissue (aureole) enlarges, takes on a more livid colour, and soon in its turn becomes gangrenous. In the first period the itching gives place to a feeling of painful tension, with more or less numbness and throbbing in the affected part; these disappear in the later stages. A general malaise constantly precedes or accompanies the appearance of the swelling. The patient experiences dull pains in the head, giddiness, sometimes a tendency to vomit. The appetite is lost; sleep is troubled with painful dreams and by delirious movements. The pulse is at first feeble, slow, and in proportion as the illness makes progress the arterial pulsations diminish. Respiration is less free, the urine becomes scanty, and the bowels cease to act. ..... If the charbon is of the severe form all the symptoms become aggravated and increase rapidly; the gangrenous eschar extends from the centre to the circumference; the surrounding vesicles burst and allow a rust-coloured serum, which blackens metals, to escape; all the affected region presents much swelling, which deforms the part and interferes with the functions, not only of the parts in immediate relation with it, but also of distant organs. If the vital forces are not sufficiently energetic to cut off the tumour and to isolate it from the rest of the economy by a strongly-marked inflammatory circle the dry gangrene spreads rapidly both in extent and depth, the absorption of deleterious material injures the functions; those of organic life are attacked the first; the patients faint frequently; hiccough comes on, accompanied with difficulty in respiration and palpitation. The functions of animal life are attacked successively; drowsiness, fits of giddiness, suspension of the intellectual faculties, and death follow rapidly."

As regards the *cause* of the disease Larrey attributes it again and again to the absorption of pernicious gas given off from marshy places drying up on the first heats of summer and thus exposing to decomposition the bodies of a "vast

[6] Larrey's Memoirs, vol. i., p. 52.

[7] Larrey's Memoirs, vol. i., p. 104.

[8] Ibid., vol. i., p. 106.

number of reptiles, molluscs, and fish." "The charbon will be more or less benign, according to the action of these gases." "If the deleterious principle is absorbed or sucked in by the lung there will be a general infection and charbons more or less grave will show themselves in different parts of the body." Here he clearly recognises a mode of infection similar to our "wool-sorters' disease." Although so deeply impressed with the danger of poisonous gas from marshy places he nevertheless adds: "Domestic animals which pass all of a sudden from the warm and healthy air of a stable to the infective air of these marshes are most apt to contract charbon, which they transmit to man in a very active form. This is the most common mode of contagion. ..... Contagion takes place more rarely from man to man, but it is communicated very easily from animal to man. Thus it is frequent among butchers, tanners, and cooks." Here he clearly recognises the share which animals play in the dissemination of the disease, while still thinking that putrefactive gases are the origin of the infection. In the present day we can scarcely admit that marshy and putrefactive emanations are simply by themselves the cause of the disease. The outbreaks of charbon in these conditions are probably due to insect bites from infected animals, or it may be to infection from dust emanating from infected animals, with which we have a parallel in this country in our own "wool-sorters' disease." But it is probable that Larrey confounds more than one disease together in these epidemics. Having no very accurate or positive means of diagnosis he probably includes under the title "anthrax" (1) simple carbuncular affections; (2) poisoned wounds, of exposed parts especially, probably produced by insect bites; and (3) possibly also simple follicular inflammations produced by infection from dirt. If this is not so it is scarcely possible to explain the following paragraph. Speaking of the danger of the affection he says: "Of whatever nature the charbon may be, if it is only idiopathic it will heal easily by simple tonics and the application of external remedies" (by which he means simple lotions). Nor a statement such as this a little further on: "We had at the military hospital of Toulon a dozen patients with this disease nearly at the same time—viz., during the month of May. The great heat which prevailed at the time had been preceded by abundant rain; the ditches of the fortifications and the small lakes surrounding the town contained an immense number of reptiles and molluscs. As these places were the first to cover themselves with spring flowers the soldiers and inhabitants used to walk there. I observed that all those affected with charbon said that they had been bitten by some reptile or insect at the instant when they were seated on the freshly growing grass, while at the same time they were absorbing the effluvium of unhealthy gases. ..... *All these patients were cured with the exception of two* who died."[9] Upon these two he made a post-mortem examination and found the evidences of general anthrax—viz., a gangrenous condition of the tissue surrounding the charbon, the stomach and intestine affected with many patches of gangrene, the omentum yellowish and spotted, all the venous system gorged with black and liquid blood—"in fact," he says, "in its results this disease appeared to me to have very close relation to plague." This whole paragraph appears to me to show so conclusively his uncertain state of mind that I make no apology for quoting it to you. It is, of course, scarcely possible to believe that, were all these 12 cases true anthrax, 10 of them would have recovered with the simple remedies which he afterwards describes. He states, however, in another place that the anthrax, which he generally saw in Provence, was not of this simple character, but was accompanied with the grave constitutional conditions which we have already described.

Treatment.—Under the head of treatment I wish to quote one other paragraph in order to show how very nearly Larrey had lost even so early as 1795–96 the valuable discovery of 1789. After describing one of the severer cases in which he says that if the symptoms come on "*avec un peu de rapidité*" the patient dies quickly he proceeds: "Nevertheless, the remedies will vary according to the character and the periods of the disease. Whatever may be its nature, supposing that one is called at the period of invasion and before the inflammatory symptoms have declared themselves, one would administer an emetic with advantage, which by unloading the *primæ viæ* gives a shock to the nervous system which enables it to recover its action and vigour. *This remedy often is sufficient to make the malady abort.* If, in spite of this, it follows its ordinary course and the first inflammatory symptoms supervene one must prescribe to the patient diluted drinks acidulated with the mineral acids, ... also camphor combined with nitrate of potash, &c. ..... One employs topically aromatic and camphorated poultices. If the eruption of the malignant pustule appears to take place with difficulty one would facilitate its appearance by the application of the dry or even of the bloody cupping glass. But general bleeding would in this stage be dangerous, as it is in the plague. When the first period has passed and the patient threatens to fall into a state of general feebleness one adds to the acidulated drinks stronger tonics, such as quinine, serpentary, and arnica. ..... Finally, in the third stage, when the anthrax is at its highest degree of development—a period when nature seeks by a crisis to rid herself of foreign and dangerous substances—one will aid her advantageously by incising the gangrenous eschars and even by extirpating all those within the reach of the instrument, *without damaging the living parts;* finally, one applies immediately concentrated sulphuric acid to the incisions in order to excite the subjacent capillary system and to facilitate a critical inflammation and the expulsion of the gangrenous portions which remain. Finally, when the eschars are entirely detached one treats the ulcer which remains with simple applications, &c."[10] The whole paragraph is exceedingly suggestive as regards the state of Larrey's mind upon the subject. I will venture to affirm that few surgeons in the present day who have any experience of true anthrax, confirmed as such by microscopical and bacteriological examination, would have any belief in the power of an emetic, even in the first stage, when a definite inoculation has taken place, to make the disease abort. Fewer still—I would fain hope *none*—would wait till the third stage of the disease, when the malady was at its height, before using the knife and the escharotic applications. Note, then, that he only cuts away the gangrenous portions of the charbon, and though the application of the concentrated sulphuric acid is good it must often have been applied at a stage too late to save the patient. Note also that it was not used with the idea of destroying the poisonous infective material but "to excite the subjacent capillary circulation" to enable Nature to throw off the sloughs. Surely a less severe stimulant than concentrated sulphuric acid would have been sufficient for this purpose. Evidently his practice is better than his theory, but here, as so often happens, his theory ruled the practice of at any rate his immediate successors, and the valuable method of treatment by early excision of the infected spot and application to it of strong escharotics became almost lost until a later period.

I think I have said and quoted enough to show how exceedingly difficult it was for our forefathers at the beginning of this century to avail themselves of methods of treatment effectual for the cure of such a disease as anthrax on account of the absence of exact means of diagnosis. If we put ourselves in the place of such a man as Larrey,—he had stumbled upon an excellent mode of treatment for the disease at an early period of his life, but he did not know the reasons for its excellence nor did he know the exact nature of the disease. Called to what he believed to be the same disease in epidemic form, but in which there were probably many cases mixed up of simple poisoned wound, he found many getting well without the use of the heroic measures he had at first believed to be necessary. Naturally a doubt arose in his mind as to their absolute necessity, and soon the first discovery he had made became lost—to the very great prejudice of the patients whom he had subsequently to treat.

It must not be supposed that these epidemics of anthrax are the only ones within Larrey's experience in which the absence of exact means of diagnosis makes it difficult for us to be sure what is the true nature of the disease of which he writes. Even in his first two volumes there are two instances. The first is the great epidemic in Friuli in 1797. He speaks of this as *une fièvre charbonneuse*, but I do not think that this was an outbreak of anthrax in epidemic form, though cases of anthrax were very likely mixed up with it. I at first thought, from the affection of the Schneiderian membrane, it

[9] Ibid. vol. i., p. 113.

[10] Ibid., vol. i., pp. 113–115.

might be a severe outbreak of glanders affecting man and beast, but there are many things militating against this view, and I must leave those who have a better practical knowledge of veterinary medicine than I possess to demonstrate exactly the nature of this disease. The second instance is his memoir on an epidemic of yellow fever in Egypt, which broke out in April, 1800, during the siege of Cairo. He says that it presented all the characters of yellow fever observed in America and the West Indies. A remark which he makes may, however, well make us hesitate to accept this view. He says: "In Egypt it only attacked the wounded, and particularly those injured in the joints, or those who had fractured bones, or the nerves, the head, or the lower part of the abdomen injured. Simple injuries of the face and of the extremities were not generally followed by any accident."[11] After giving proof of its contagious character he adds that he does not think "this contagion has a sphere so extensive as that of plague and contagious typhus"—the proof being that it did not occur in the wards on the first and second floors of the hospital on the farm of Ibrahym Bey, where the fever patients were placed. That true yellow fever, as seen in America should occur only in patients with a particular class of wounds, that it should confine itself to the patients on the ground floor of the hospital and never show itself in those of the first and second floors of the same hospital would be, to say the least, a curious novelty in the history of this disease. It may be doubted then whether the affection was true yellow fever. More likely it was a very severe form of septicæmia complicated with some form of malarial poisoning. And the paper which he quotes from the English experiences in Egypt at the same time tends to support this view.

Before quitting the subject of anthrax let me quote one or two cases from my own experience which bear rather strikingly upon this question of exact diagnosis as one of the great advances of this century. Some years ago, shortly after the bacillus of anthrax had been demonstrated to us at Guy's Hospital, I was sent for to see a case of what was believed to be acute facial erysipelas in a butcher. I found the patient dying; in fact, he died about three hours after I saw him. He was pulseless and not in a state in which anything could be done. Something, however, in the case suggested to me the suspicion that it was not an ordinary case of erysipelas. The whole of the face, the neck, and the upper part of the chest were immensely swollen, reddened, and infiltrated, so as to be scarcely recognisable. There was, however, clearly a centre of infection where he was believed to have poisoned himself. This patch was gangrenous in its centre; but it was the circumferential part which excited my suspicion. I took home some of the serum and epidermal tissue and subsequently satisfied myself of the existence of anthrax bacilli. This, then, was a case of unrecognised anthrax which but for our later investigations might have remained unrecognised and might have become a centre of infection to the family and attendants. I had, however, before leaving the house given a special warning as regards the risk of infection and suggested the means of avoiding it. I have reason to believe that these were carefully attended to and I did not hear of any other patient having become infected from this case.

As a contrast to this I should like to report another, though I may raise a laugh against myself by so doing. It was one in which I excised a large vaccination vesicle from the face of a girl in Charity Ward at Guy's Hospital some years later. At the time I was uncertain what was the exact nature of the affection. The girl was about 19 years of age but was very ignorant and stupid. The face was greatly swollen and inflamed. No bacilli of anthrax could be found and the possibility of its being a vaccination vesicle suggested itself to our minds. It was, however, much larger than any vaccine vesicle I had ever seen. The patient on being questioned utterly denied the possibility of its being a vaccine vesicle and she had one cicatrix of old vaccination in infancy on the arm. In this uncertainty as regards its nature and greatly impressed with the risk of leaving an undetected case of anthrax without removal I decided to operate and publicly stated my reasons for so doing in our operating theatre. The patch was removed *en masse* and the wound treated exactly as if it were a proved case of anthrax. The patient got well, with perhaps rather a larger cicatrix on her cheek than she might have had if she had been left alone. The excised patch was examined bacteriologically and histologically and it was pronounced to be a vaccination vesicle. On cross examination of the patient and her friends again it was then admitted that she had been nursing a recently vaccinated child through the fever. There seemed no reason why a fact of this description should have been concealed from us, so we can only set down the concealment to ignorance or stupidity. I still think that under the circumstances we did the right thing.

May we then take the absence or presence of anthrax bacilli as the test determining whether the infected patch should be excised or not? I am afraid not absolutely. Within the course of the last three months a case of doubtful anthrax was admitted to my wards. I had it twice examined for anthrax bacilli on successive days, once by cultivation experiments, but our bacteriologists failed to detect any. The characteristic ring of vesicles was also absent. Fearing that the case was one of erysipelatous poisoned wound, the swelling and infiltration being already considerable, I had the patient removed to our erysipelas ward. On the following day the characteristic ring of vesicles about the central infection appeared and my colleague, Mr. A. D. Fripp, recognising it, excised it, the case subsequently doing well. No further examination for bacilli appears to have been made. I regret this because it detracts somewhat from the value of the case. I fear, however, that we must not expect always to detect the bacilli before operating. Still, these negative results do not prove the absence of the bacillus in the case examined. This *may* be due to the inexperience or want of care on the part of the investigator. Cases giving negative results, however, must be regarded as the exception. Although they may make the treatment of individual cases more uncertain, yet they could not in the present day prevent the nature of a great epidemic, such as Larrey describes, being recognised and the necessary operative treatment being undertaken.

Typhus and typhoid fevers.—I have used these epidemics of anthrax as striking illustrations of the importance of bacteriological investigation and of a definite, fairly easily applied clinical test in the diagnosis and treatment of zymotic disease. The last century has fortunately seen other gains in this direction. Sixty years ago no marked distinction was made between typhus and typhoid fevers; they were both classed together as "common continued fever." The separation of these two diseases was effected mainly by the late Sir William Jenner by accurate observation in the post-mortem room and by comparison of the facts observed there with the symptoms observed clinically. The definite fact, however, obtained by these observations—viz., the ulceration of Peyer's patches—was a post-mortem sign. It was not available as a means of diagnosis in the early stages of the disease. We all remember the troubles of diagnosis in our student days in the early stages of typhoid. Was it a case of typhoid at all, or was it miliary tuberculosis, or meningitis, or half-a-dozen other possible diseases? Within the course of the last two or three years a great gain in Widal's test has been added to the early diagnosis of typhoid fever, and I am told by those competent to speak that after from the seventh to the tenth day of the fever this test is quite reliable—that, in fact, it only fails in about one in 500 cases. I am afraid, however, that the same cannot be said of typhus fever. The comparative rarity of epidemics of typhus fever in the present day has left much to be still investigated in its bacteriology. Were all the great epidemics of so-called typhus fever of the past century those of the same disease? Especially were all the epidemics of typhus fever associated with famine and those associated with the movement after battles of great bodies of troops identical? I very much doubt it. It seems to me that the word "typhus" was applied to almost any form of contagious adynamic fever of great mortality. Take the epidemic which Larrey describes as breaking out at Brün after the battle of Austerlitz. When passing through this place before the battle he describes it in very favourable terms as most suitable for affording extensive hospital accommodation. Nevertheless, afterwards, when Brün was filled with the wounded, it became a hot-bed of infection. Was this true typhus? I think not, though possibly cases of this disease may have been mixed up with it, for it spread from the wounded to the civil population. It is true that Larrey describes it in these words, "une fièvre putride, nerveuse, maligne, noso-comiale, *ou thyphus contagieux* des anciens nosologistes." I think the epidemic was more probably a

[11] Ibid., vol. ii., p. 19.

very severe outbreak of hospital gangrene, at any rate, at the beginning. It commenced among the wounded and was characterised by severe constitutional symptoms with sloughing of all the wounds which became gangrenous. The gangrene spread with great rapidity, and quickly caused the death of the patient. At first it attacked only the wounded, but when the place became a hotbed of infectivity it spread to the civil population, presumably to those without wounds. Nevertheless, there is no mention of mulberry or other rashes occurring during the epidemic, and it was confined very much to the wounded of the line and to the Russian prisoners. For instance, Larrey says that very few cases occurred amongst the wounded soldiers of the Guard. These soldiers were in a distinct hospital remote from the others and from the crowded quarters of the city. The hospital was well ventilated, the sanitary conditions were good, and the staff attending on the patients was distinct from that attending on the other hospitals. Nevertheless, a few cases occurred from infection carried from the other hospitals. Good as the sanitary conditions may have been they were not such as would have prevented an epidemic of true typhus fever from spreading among them when once it had obtained a footing in the wards; whereas with hospital gangrene these sanitary precautions would very likely have had the effect of limiting or preventing an outbreak, even when isolated cases occurred in the wards. How serious the outbreak in the other hospitals was may be gathered from the fact that they lost in the short space of a month more than a quarter of all the wounded soldiers of the line mainly from this cause. How many more were lost afterwards we are not told. But the disease raged amongst the prisoners of war and it spread to all the places in the line of march to France to which the wounded and the prisoners were sent. A similar outbreak occurred after the great Russian campaign during the retreat from Moscow. But the records of this are less accurately preserved and it was undoubtedly mixed up with the effects of frost-bite and many other conditions. I think, however, that I have said enough to show the importance of a good bacteriological test for typhus fever even to surgeons. The treatment of hospital gangrene, which is mainly *local* in its origin, is essentially different from true typhus fever, and if the two diseases are confused together—if they cannot be distinguished from each other by some test which is conclusive and which can be readily applied—the treatment of both conditions will be alike unsatisfactory. For our bacteriologists therefore there is an important investigation to be worked out in this direction.

Diphtheria.—Diphtheria, on the other hand, is a striking example of an epidemic disease in which this investigation has already been carried out, and few who know the large effect which this accurate bacterial diagnosis has had on the successful treatment of this disease by means of the injection of serum will be found to dispute its importance. This is true, not only for the disease itself, but for the sequelæ, especially the paralytic forms. I might instance the defects in vision in childhood due to paralysis of the musculus ciliaris, which so many authorities on the subject now consider to be sequelæ of diphtheria.

As an instance of the importance from an economic point of view of the bacteriological discoveries of the latter part of this century I should like to remind you of a now almost forgotten page of our medical and surgical history. About 40 years ago the construction of our large hospitals was very seriously attacked from a most radical point of view. It was alleged that they were saturated with the infective materials of erysipelas and pyæmia and with the poisons which generate the various zymotic diseases—even down to the various materials (the bricks, mortar, timber, &c.), of which they were composed—and that this was the reason of the repeated outbreaks of these diseases, even after purification and disinfection; that it was in fact practically impossible to disinfect completely these old hospitals, and that the only cure was to pull them completely down and build new ones. These new ones were to be of very cheap construction, so that they in their turn could be speedily destroyed and replaced by new material. They were to be mostly one-storeyed buildings, rather of the nature of huts than of buildings like our present hospitals. A life of from 12 to 14 years was tentatively assigned to them. To say nothing of the enormous expense involved in the practical carrying out of such theories and of the dislocation of medical and surgical relief to the poor while these changes were being effected, it may be doubted whether the complicated and prolonged operations which we now perform could have been successfully done in temporary hospitals of the kind mentioned. It was pointed out, also, that outbreaks of erysipelas and pyæmia were not unknown even in absolutely new hospitals within even a few weeks of their wards being opened. The introduction of Listerism, however, closed this discussion. It was found perfectly safe to perform the most complicated and dangerous operations in the older hospitals with due attention to antiseptic precautions, and though aseptic surgeons may still sigh for the pleasure of constructing a hospital ward entirely after their own fancies, or an aseptic operating theatre in which no germ shall lurk, we hear little now of the necessity of abolishing our older hospitals and constructing entirely new ones. It is true that the idea still exists in the minds of those who write on hospital construction, as, for instance, when they advocate the construction of hospitals with only one floor and say that nothing more than two floors is justifiable—propositions which are true in hospitals for zymotic disease but which are neither true nor practicable for hospitals constructed for the ordinary cases of disease admitted every day from the civil population of a crowded city. It is a principle, however, which is true as regards military hospitals in a great campaign, on account of the liability to sudden overcrowding from the admission of large numbers of wounded, and hence the liability to outbreaks of hospital gangrene and septic conditions. In the great Napoleonic campaigns, Larrey again and again reverts to the importance of evacuating the crowded hospitals and spreading the wounded over a wider area. This may be regarded as an application of the same principle in another direction. It was usually accomplished by sending all those capable of removal back towards France, thus keeping them in movement, although the accommodation provided for them *en route* might be of the most meagre description. Unfortunately this had also the effect in some cases of spreading outbreaks of zymotic disease in localities where it did not previously exist. Still, we cannot doubt that the general principle is correct and that it had the effect of saving thousands of lives in these great campaigns.

Time does not permit me to read what I had written in reference to the great advances in abdominal surgery and to the treatment of joint diseases. A host of other subjects remain upon which I have written nothing—all the great advances which have taken place in ophthalmic and laryngeal surgery, for instance, advances which only the more accurate means of investigation at present in use have rendered possible. I have preferred to spend the most of my time in the illustration of infectious disease because I think that in this direction there is the most hope of advance in the immediate future. In anthrax, in typhoid fever, and in diphtheria, this advance has been already accomplished, though each in a rather different way and by methods which are most likely susceptible of further improvement. Plague and cholera also may be reckoned in the same list. But in the majority of zymotic diseases we are still in want of a clear, easily applied, and undoubted diagnostic test. In one or two—tetanus, for example (if I may class it as a zymosis, as I think I may)—we seem on the verge of discovery, but the discovery has not yet been pushed satisfactorily home. The same may be said of glanders and farcy when occurring in the human subject. How necessary the absolute diagnostic test is in the case of tetanus may be seen in the pages of Larrey. If the reader will compare carefully and critically his Memoir on Tetanus, his illustrative cases, and his account of the outbreaks which occurred amongst the wounded after some of the great battles—e.g., during the campaign in Egypt, after the battle of Austerlitz, &c.—he will, I think, become convinced that Larrey mixes up and draws conclusions from cases of true tetanus and those which are not tetanus at all although presenting symptoms in many respects similar. This is from want of some positive and definite test—for which, in fact, we are still investigating. May we not hope that in the new century now so nearly opening to us these investigations will be satisfactorily carried out and that in the records of the time to come future readers will reap the benefit of the greater accuracy thereby attained.

And yet, while wondering at and admiring all the great advances of the last 100 years, while hoping for similar great advances in the future, while urging our pathologists and bacteriologists to pursue those investigations which may have such an important influence upon the treatment of disease in the future, it may be wise to add a word of warning. There is a tendency in making these very

complicated investigations to conclude too much from a single instance. Very grave errors will arise in the conclusions of the future unless investigators will guard themselves most carefully from this error. In other directions we are all apt to become too dogmatic in our views, which we believe are based on indisputable facts—views, however, which on further examination we find it necessary to modify in accordance with our increasing knowledge and experience. Nowhere is this shown more strikingly than in the rapid changes of antiseptic and aseptic details in the treatment of wounds which have chased each other like cloud-shadows across our surgical stage during the course of the last twenty years. It may reasonably be doubted how far some of these details are really scientific and how far they are mere fads. I would conclude this lecture, then, by quoting an admirable saying, attributed to the late Master of Trinity: "We are none of us infallible; no, not even the youngest of us."

ABSTRACT OF

The Harveian Lectures

ON

THE TREATMENT OF SURGICAL TUBERCULOUS AFFECTIONS.

Delivered before the Harveian Society of London on Dec. 7th, 14th, and 21st, 1899,

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LECTURE II.[1]

Delivered on Dec. 14th.

TUBERCULOUS PERITONITIS.

THE lecturer pointed out that tuberculous peritonitis is by no means an uncommon affection, occurring in rather more than 5 per cent. of tuberculous patients examined post mortem. Apart from the acute tuberculosis of the peritoneum, which gives rise to no symptoms, Mr. Watson Cheyne classified the pathological changes met with in cases of tuberculous peritonitis under the following three types. 1. The peritoneum may be studded with tubercles of varying size, some small, greyish, and transparent, others larger and tending to become cheesy. These tubercles are scattered over both the visceral and the parietal peritoneum; frequently patches of fibrinous exudation lie over them, but there is not any matting together of the intestines or shrinking of the omentum or mesentery. In most cases there is more or less fluid in the abdominal cavity, straw-coloured or tinged with blood. The finger passed into such a cavity feels as if it were passed into a bag of sago. The tubercles are not equally distributed over the whole cavity, but more usually in patches in connexion more especially with any tuberculous lesion, such as tuberculous peritonitis, disease of the Fallopian tubes, &c., from which they have originated. The fluid may be free in the abdominal cavity or it may be more or less encysted on account of the fibrinous exudation confining it. 2. The type of the second-class of pathological changes is fibroid induration, the intestines being matted together by adhesions in which tubercles are present, the omentum being shrunken and drawn up, forming an elongated mass adherent usually to the anterior wall about the level of the umbilicus, and the mesentery being also shrunken and dragging up the intestines. The mesenteric glands are enlarged, but not as a rule cheesy. This adhesive form may or may not be accompanied with the presence of fluid; and where fluid is present it is most often encapsuled. 3. A third set of cases are those where there is a marked tendency to caseation of the tubercles. Under these circumstances the mesenteric glands are enlarged and caseous, the omentum is often converted into a caseous mass, and the adhesions which bind the intestines together also contain quantities of cheesy material. The contractions and adhesions of the intestine and the shrinking of the mesentery and the other changes mentioned under type 2 are usually much exaggerated. This condition is especially associated with intestinal ulceration and perforation of the intestine may have occurred. Collections of fluid are frequently present, most usually encapsuled and multiple, and not uncommonly purulent. The pus may present all the characters of ordinary tuberculous pus, but in other cases it may be foul-smelling from infection from the intestine. In infants the condition is often most marked in the neighbourhood of the umbilicus and the pus may make its way through the abdominal wall at this point. Very often the sinus which passes into the abdomen also leads into the intestine, there being a fæcal fistula as well.

There are all sorts of intermediate forms and varieties of these pathological changes and in most cases the condition is very localised, more especially in the pelvic region, in connexion with infection from the Fallopian tubes, and in the right iliac region in connexion with tuberculous appendicitis or tuberculous disease of the cæcum.

As to the origin of tuberculous peritonitis, Mr. Watson Cheyne pointed out that it was most commonly secondary to tuberculous disease elsewhere, such as phthisis, disease of bones and joints, &c., or to tuberculous disease of some intra-abdominal organ, such as tuberculous ulceration of the intestine, tuberculous disease of the Fallopian tubes, &c., and that in some apparently rare cases it might be primary. Intestinal ulceration is looked on as one of the most common causes, and probably it accounts for about 20 per cent. of the cases. It is the gravest form and serious both as regards the chances of recovery and the general condition of the patient. Infection from the Fallopian tubes is also not an uncommon cause in females, and the fact that this may occur is a strong argument in favour of early removal of diseased tubes, more especially if there is any suspicion that the disease is of a tuberculous nature.

As regards sex, the lecturer referred to the curious fact that in the cases operated on the great majority were females, whereas in the cases examined post mortem the great majority were males. The explanation of this contradiction is not by any means clear, but among other points to be remembered is the fact that operations are frequently undertaken in these cases under a mistaken diagnosis, more especially a diagnosis of ovarian tumour, hence of course in women; that women submit more frequently to exploratory operations than men, and that the female cases probably come more under the notice of the operating gynæcologist and the surgeon than do the male cases. Indeed, to some extent the difference between the two sets of statistics might be taken to represent the relative value of medical and surgical treatment, the patients not operated upon appearing much more often on the post-mortem table than those who are.

Reference was then made to the symptoms of the disease, in some cases the symptoms being acute and leading to mistaken diagnosis of typhoid fever, &c., but as a rule beginning quite insidiously and only ultimately attracting attention from increasing weakness, enlargement of the abdomen, and possibly after some time a certain amount of pain. The examination of the abdomen under these circumstances reveals either the presence of fluid, free or in loculi, or where fluid is absent the presence of tumour-like masses, thickened omentum, adhesions, shrinking of the mesentery, &c. There may be also marked meteorismus, frequently symptoms of intestinal obstruction or at any rate of difficulty in passage of the fæces on account of the tendency to kinking of the intestines, contraction of the adhesions or narrowing of the lumen from bands crossing the intestine.

Various complications were referred to, such as intestinal obstruction, perforation, suppuration, tuberculous pleurisy, &c. Various points were then mentioned as regards the diagnosis of tuberculous peritonitis which has to be chiefly distinguished from ulcer or cancer of the stomach, gastro-intestinal catarrh, typhoid fever, peritoneal cancer, chronic peritonitis from other causes, and ovarian or other cysts. The views as to the prognosis of tuberculous peritonitis where the case is left to itself are somewhat contradictory, the majority of practitioners looking on the disease as a very grave one, while others consider that provided the condition is uncomplicated the gravity is not very great. It certainly is true that the chief causes of death are the complications,

[1] Lecture I. was published in THE LANCET of Dec. 16th, 1899.

more especially ulceration of the intestine, phthisis, tuberculous pleurisy, &c. The gravest form is that where caseation is occurring. The most favourable form, in which apparently only about from 14 to 17 per cent. die, is the adhesive form (No. 2).

The medical treatment was discussed, consisting essentially in good hygiene, careful regulation of the diet, the regulation of the bowels, the use of intestinal antiseptics, such as creasote, salol, guaiacol, iodoform, the relief of pain, &c.

With regard to surgical treatment the value of surgical measures was found out quite accidentally some 37 years ago, and as abdominal surgery became more practised these mistakes were so frequently made and recovery so frequently followed that it became apparent that laparotomy had a distinctly beneficial effect on tuberculous peritonitis. Hence surgeons took it up as a definite measure of treatment, and König in 1890 collected results showing that about 84 out of 131 cases were apparently cured. In 1895 Roersch put together 358 cases with the following results: 20 deaths apparently from shock, one from acute bacillary peritonitis, one from intestinal fistula, 10 from septic peritonitis, and 51 within 18 months from extension of the disease, such as general tuberculosis, tuberculous meningitis, marasmus with stercoral fistula, &c., some of these in the meantime having shown temporary improvement. In the rest of these cases improvement followed and in a large number apparently cure. For example, in 53 cases two years and upwards had elapsed since the operation and the patients were apparently well. In fact, as the result of these statistics it would almost appear as if 75 per cent. of the cases operated on were improved or cured, but the lecturer pointed out that this is probably far too high a percentage, seeing that these statistics are made up not from the practice of one individual surgeon but from published cases, and it does not necessarily follow that all cases occurring in the experience of each surgeon have been published. Mr. Watson Cheyne thought that about 50 per cent. would probably be the outside limit of improvement or cure if all cases were operated on, but the results would be better, no doubt, if only favourable cases were selected. Reference was made to the cases which were most favourable and especially to the elaborate tables worked out by Aldibert for the purpose of comparing the clinical results with the pathological conditions present. His tables show that in the ascitic forms, especially when associated with adhesive peritonitis, there was a large proportion of improvement. In the ascitic form, also associated with the changes mentioned under No. 1, improvement was considerable. Improvement also occurred, though to a less extent, in cases of adhesive peritonitis where no ascitic fluid was present, something like 70 per cent. showing benefit, whereas the cases of the caseating form were very much more unfavourable. Nevertheless, even there some cases were improved. The result apparently is that there is no class of case of tuberculous peritonitis in which improvement has not sometimes followed operation, and that therefore it is difficult to exclude any case from laparotomy; and the lecturer was inclined to think that in cases where, after a fair trial of medicinal treatment, improvement did not follow, laparotomy should be performed, whether it belonged to the most favourable class or not, provided always that the patient was not moribund when the surgeon was called in.

The immediate mortality of the disease, which in some of the statistics seems pretty high, will no doubt become less as time goes on. Septic peritonitis, for example, ought not to occur nowadays unless the intestine is ruptured and deaths from shock ought not to be frequent, for in the first place the patients should not be left till they are practically moribund before the surgeon is called in, and in the second place the operation ought not to be in any instance so extensive as to lead to any great shock; more especially no attempts should be made in bad cases to remove any portion of the diseased tissue. Most of the deaths are from intercurrent disease, such as phthisis, and very frequently there is a temporary improvement after the operation. These deaths would have resulted even had no operation been performed and all that we can say with regard to them is that the patient has had a chance but that success has not followed. Mr. Watson Cheyne continued:—

The prognosis of laparotomy naturally varies in different cases. The most favourable are certainly those belonging to the first group with localised ascites and the next most favourable are those where the fluid is diffused over the abdomen. I must confess that I have been surprised at the recovery in some of these cases. On opening the abdomen one finds tubercles everywhere, the intestines protrude from the wound and are seen to be red, inflamed, and covered with tubercles, some of them sometimes of considerable size, the abdominal cavity feels like a bag of rice, and yet in these cases recovery may follow. In two instances in which I made a very bad prognosis after the operation on account of the size and number of the tubercles scattered all over the intestine and abdominal cavity recovery took place rapidly and apparently completely. The next most favourable are the cases where there is no ascites and where we have the fibro-adhesive form in a moderate extent as described under heading No. 2. Indeed, favourable results have been obtained in this form even where the adhesions were so great that the operator never penetrated into the abdominal cavity. By some this fibro-adhesive form is looked on as a healing process, and it is held that the operation probably merely gives it a fillip in a good many cases. Where the abdomen contains large caseating masses the prognosis is much more grave and, as is evident from the results mentioned above, the successes are not nearly so great. At the same time they do occur and I have myself had a successful result even where there were large masses of caseating material. In this group, however, it is rather the case of giving the patient a chance than of any great probability of curing him. It must also be borne in mind that it is in these cases more especially that harm may be done by the operation, for unless great care be taken the intestine may be very readily torn and a fæcal fistula established. Indeed, in some instances even where there is no apparent injury to the intestine a fæcal fistula may result after the operation. In these cases also it is not uncommon to find that the scar breaks down subsequently, having become infected with tubercle, but, even in spite of this, healing may ultimately occur in due time where a fæcal fistula has also formed, provided always that it is not large or situated high up in the small intestine.

Cases with slight phthisis also frequently improve both locally and also as regards the lung after operation, but where the phthisis is extensive the result is not good. Opinions differ as regards the effect of pleuritic effusion on the results of operation, but as a whole it is not looked on as a contra-indication. Cases with intestinal ulceration are particularly unfavourable, and it is a question there whether laparotomy does any good at all. Spaeth also asserts that cases secondary to tubal disease are not benefited by laparotomy, even although the tubes are removed, but this is contrary to the experience of Aldibert and of a number of other observers who have obtained good results even where the tubes were not touched. The great risk of tuberculous peritonitis in these cases of tuberculous salpingitis, however, makes it essential that when a diagnosis of tuberculous salpingitis is made the tubes should be removed at once.

From the evidence I should say that in practically all cases where improvement does not follow under medicinal treatment after a reasonable time, say, in from four to six weeks in acute cases to from four to six months in chronic cases, the abdomen should be opened whether there be ascitic fluid or not. The operation may do good in cases where it is least expected to do so and it is but seldom that it can do any harm. Do not in any case allow the patient to go downhill too much, otherwise one cannot expect good results to follow, and it is fair neither to the patient nor to the surgeon. It seems to me a very questionable thing whether it is good for the patient that the ascitic fluid should be absorbed seeing that it contains toxins and bacilli, and therefore, as I have said, where improvement does not follow soon I believe that early laparotomy is best. And the medical treatment can follow the operation just as well or better than if it precede it.

On the other hand, it apparently does not do to operate too soon. Where one operates quite in the early stage recurrence, curiously enough, is very apt to take place, and the explanation of this I believe to be that which I shall give presently in connexion with the *modus operandi* of the operation. However it may be explained it certainly is the fact that most of the cases where repeated operations for recurrence have taken place have been those in which the first operation was performed quite at the commencement of the disease. On the other hand, it is most important not to wait till the patient has gone too far downhill. If the patient suffers pain from bands, or from kinking of the intestine, or from

obstruction, operation is necessary, even although much good may not result.

In operating, as has been before stated, it is well not to carry the procedure to the extent of attempting to remove any of the diseased tissues, such as excision of an ulcer of the intestine, the removal of tubes, &c., unless, indeed, one finds only quite a commencing peritonitis at that part. The removal of the tubes, for example, in the case of advanced peritonitis would mean a prolonged and very difficult operation owing to the adhesions in a peritoneal cavity already very much inflamed, and it is one which would almost certainly precipitate the patient's death from shock. On the other hand, if on opening the abdomen one finds only slight commencing peritonitis around the tubes, then I believe they ought to be removed so as to prevent further infection. Similarly, in the case of the appendix or cæcum, while a few cases have improved as the result simply of opening the abdomen, the best results have been obtained in cases where the disease has been localised to that region and where the appendix or cæcum itself have been resected. On the other hand, in cases with intestinal fistula operation is out of the question. The patient cannot stand a proper operation for resection of the fistulous portion and the intestine in the neighbourhood of the fistula is usually so thinned and diseased that any attempt to stitch up the whole without resection practically always fails and such attempts leave matters worse than they were before. Lastly, it may be said that if one is in doubt it is better to operate than to leave things alone.

Operation.—A few words as to the surgical procedures. Some, thinking that the beneficial results of laparotomy were simply due to the evacuation of the fluid, have concluded that the same result would be obtained by aspirating the abdomen; this, however, does not seem to be the case; good results have certainly in a few cases followed puncture with evacuation of the fluid and injection of air, but simply tapping the abdomen seems to be quite inefficacious. Further, puncture of the abdomen is a procedure by no means free from danger in these cases. It is not at all uncommon for the intestine to become adherent to the abdomen in the middle line, and cases have occurred where it has been punctured by the trocar and the death of the patient has resulted. Hence, partly on account of its inefficiency and partly on account of its danger, puncturing the abdomen should be given up as a means of treatment.

The operative procedure is very simple in most cases. Where effusion is present without adhesions it simply consists in opening the abdomen in the middle line below the umbilicus, allowing the fluid to run out, aided by turning the patient on his side and perhaps removing some of it by means of sponges, and then stitching up the wound again. In former days the abdomen was washed out with various antiseptic solutions, such as carbolic acid, sublimate, &c., some leaving the solution in, others flushing out the abdomen afterwards with salt solution. Others, again, very carefully dried the cavity as far as possible with sponges and so forth. All this seems, however, to be unnecessary and in reality inadvisable, for as good results are obtained by simple laparotomy without the introduction of any chemical substance at all, or even without flushing out the abdomen or complete removal of the fluid, as where these measures are adopted. Where adhesions are present care must be taken in opening the abdomen not to injure the intestine, and if the adhesions are firm it is better to leave them alone and close the wound than to try to force one's way in unless fluid be present.

In the dry fibrous form, unless the intestine is becoming kinked or bound down by adhesions, it is seldom advisable to try to separate the coils on account of the risk of weakening the wall of the bowel and consequently leading to a fæcal fistula. If, however, obstruction is present it must be relieved or an anastomosis must be made between the coils above and below. Should a rent occur in the peritoneal coat in the course of such an operation it should be very carefully stitched up. Where pus is found it should be washed out by salt solution, and it is then well to introduce a little iodoform and glycerine emulsion into the cavity before closing it.

The question of drainage has been raised in these cases, but there does not appear to be any advantage in draining where the fluid is serous, and there is the disadvantage that in some cases it has happened that a tuberculous sinus has been left at the seat of the drainage-tube. Even where pus is present, unless it be foul-smelling, it seems best to treat it like a chronic abscess elsewhere by washing it out thoroughly, injecting a little iodoform and glycerine, and closing the wound again.

An important point arises—namely, whether a primary focus, such as a tube or appendix, &c., if found should be removed. This, as I have already said, depends very much on the extent of the disease. If the whole peritoneum is infected then no attempt should be made to remove the primary focus, such attempts having generally ended disastrously. On the other hand, if the tuberculous peritonitis be limited to the immediate vicinity of the tube or appendix and cæcum, the removal of the primary source is very important, and much better results are obtained by so doing than by simple laparotomy.

As regards the course followed after laparotomy, in some cases immediate improvement begins, while in others 10 days or longer may elapse before any noticeable effect is produced. In any case medical measures should be superadded to the surgical as soon as possible. In some cases the fluid reaccumulates and there is then no objection to a subsequent laparotomy; indeed, as has been already said, there are some instances where several laparotomies were performed and where cure was ultimately obtained.

The lecturer then discussed the *rationale* of the operation and pointed out that as a matter of fact no real explanation had as yet been furnished, the various theories suggested, such as the action of air, of light, the removal of the fluid, the formation of adhesions, the restoration of the circulation and so forth, being all open to serious objection. His own impression was that the explanation is probably very much the same as the explanation of why suppuration ceases in an acute abscess after it has been opened antiseptically, whatever that explanation may be. The theory that Mr. Watson Cheyne suggested in the case of acute suppuration was that during the course of the disease "an antitoxin is being formed in the blood and that as the result of opening the abscess large quantities of serum are poured out and brought thus in contact with the bacteria in the wall of the abscess and exert an anti-bacteric effect. On the other hand, if the operation is performed too early the serum has not had time to acquire a sufficient anti-bacteric property and, further, the same amount of serum is not poured out. It is possible that the conditions are somewhat similar in tuberculous peritonitis. Where a large quantity of fluid is rapidly removed serum is certain to be poured out to a considerable extent, and this serum may be more or less bactericidal. Even in dry peritonitis the irritation of opening the abdomen and separating a number of adhesions leads also to effusion of serum, and it may be that the reason why in dry peritonitis the result is not quite so good as in peritonitis with effusions is that this serum does not act over the whole of the affected area, as it would do if adhesions were absent or if the whole area were exposed to rapid increase in circulation where a large diffuse collection of fluid has been removed. Further, following on the weakening of the bacilli as the result of this anti-bacteric serum which is poured out we have exudation of cells and increased fibrous formation and fibroid changes in and around the tubercles which complete their destruction."

It was pointed out that, whatever be the explanation, the result was frequently a true cure of the tuberculous peritonitis. Not only do the symptoms subside but the actual lesions disappear, and in some cases that have been opened some considerable time after the operation the peritoneal cavity has been found quite smooth and free from any tubercles or adhesions. This is apparently the result of fibrous formation in the tubercles and the process of transformation of the tubercles into fibrous tissue can be traced in cases where the abdomen has been opened subsequently to the first operation either because the disease was not improving or for some other reason, such as obstruction. Experiments on animals have also been carried out which show that laparotomy in cases of artificially induced tuberculous peritonitis, in dogs more especially, has a similar beneficial effect, and there also the effect is not so good if the abdomen is opened too soon as when it is left till the tuberculous peritonitis is well established.

TYPHOID FEVER IN CORNWALL.—During November 31 cases of typhoid fever were notified in Cornwall and three deaths occurred from the disease, as against 43 cases with six deaths in October. In Falmouth there were 12 cases, with two deaths, and in Bodmin (rural) four cases.

OBSERVATIONS BEARING ON THE QUESTION OF THE INFLUENCE WHICH IS EXERTED BY THE AGGLUTININS IN THE INFECTED ORGANISM.

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THE question as to how far the production of specific agglutinating and sedimentary substances stands in relation to the process of immunisation is a question which is manifestly of the highest moment. That there must be some relation between the production of agglutinins and the production of immunity appears certain, not only from the fact that bacteria undergo distortion and become immobilised under the influence of their corresponding agglutinins, but also from the fact that the bacteria in question are inhibited in their growth when they are transferred to a highly agglutinative culture medium. If nothing else had been elicited concerning the agglutinins, these facts would of themselves suffice to show that agglutinins are "bacteriotropic"[1] and anti-bacterial substances.

About this particular point, therefore, there would appear to be no controversy. Widely divergent views have, however, been expressed on the question as to how far the agglutinins exert an influence in warding off a bacterial invasion and in restraining the growth of such bacteria as may before the production of agglutinins have established themselves in the interior of the organism. We do not propose here to enter into consideration of all the arguments which have been advanced with the view of showing that no sensible influence in restraining the growth of bacteria is exerted by agglutinins in the organism. We propose here to confine ourselves to the consideration of the argument that the agglutinins must be inoperative *in vivo*, inasmuch as the bacillus typhosus or the micrococcus melitensis, as the case may be, continues to cultivate itself in the organism long subsequent to the appearance of agglutinins in the blood. We may begin by pointing out that the conclusion that the agglutinins are inoperative *in vivo* is forced upon us only if it can be established for a certainty that the micro-organisms which cultivate themselves in the organism are, as a matter of fact, cultivating themselves in the presence of agglutinins. Now this is a question which is capable of being resolved by a quantitative determination of the amount of agglutinins in the organs in which the micro-organisms are cultivating themselves. The observations which we have made in connexion with this question are as follows.

CASE 1.—The patient had a very severe attack of typhoid fever and died during the third week. At the necropsy, held 24 hours[2] after death, the typhoid bacillus was isolated in pure culture from the spleen. 12 grammes of splenic substance were extracted with an equal weight of normal saline solution. The amount of agglutinating substance in the clear filtrate which was obtained from the above was quantitatively determined in sedimentation tubes by the method which was described by one of us in the *British Medical Journal* of Feb. 5th, 1897. At the same time the agglutinating power of the heart-blood was determined in the same manner. The results may be tabulated exactly as follows:—

—	Dilutions.					
	4-fold.	6-fold.	12-fold.	16-fold.	20-fold.	100-fold.
Serum of heart-blood	Complete.	Complete.	Complete.	Complete.	Complete.	Incomplete.
Serum of spleen	Trace.	Trace.	*Nil.*	*Nil.*	*Nil.*	*Nil.*

NOTE.—A slight inaccuracy has been admitted into these and all the subsequent records inasmuch as the 12 grammes of spleen which were employed for this experiment are treated here as if they had been the equivalent of 12 grammes of splenic serum. They were in reality the equivalent of only 10 grammes of splenic serum, inasmuch as the solid substances of the spleen amount to about one-sixth of its weight. The difference is manifestly one which is not worth taking into account in view of the considerable differences which are revealed in the tables of results.

CASE 2.—The patient had a typical attack of typhoid fever. He succumbed about the end of the fourth week. At the necropsy, held 24 hours after death, the typhoid bacillus was obtained in pure culture from the spleen. The agglutinins in the heart-blood and in the spleen were estimated in the same manner as in the first case. The following were the results:—

—	Dilutions.					
	10-fold.	20-fold.	40-fold.	100-fold.	150-fold.	200-fold.
Serum of heart-blood	Complete.	Complete.	Complete.	Complete.	Complete.	Incomplete.
Serum of spleen	Incomplete.	Trace.	Trace.	*Nil.*	*Nil.*	*Nil.*

CASE 3.—The patient died after a short typical attack of typhoid fever. At the necropsy, which took place 20 hours after death, Peyer's patches were found to be much swollen and congested. They were not ulcerated. The bacillus typhosus was recovered in pure culture from the spleen. The agglutinins were quantitatively estimated (by the same methods as were employed above) in the heart-blood, spleen, and in the Peyer's patches. The estimation of the agglutinins in the spleen miscarried through an accident. The results obtained on the heart-blood and in the extract from the Peyer's patches are given below:—

—	Dilutions.					
	8-fold.	16-fold.	20-fold.	50-fold.	80-fold.	100-fold.
Serum of heart-blood	Complete.	Complete.	Complete.	Complete.	Complete.	Incomplete.
Serum from Peyer's patches	Incomplete.	Traces.	*Nil.*	*Nil.*	*Nil.*	*Nil.*

CASE 4.—The patient suffered from a continued fever. This fever was diagnosed as typhoid during life only by the agglutination reaction. Death occurred suddenly five days after the fall of temperature. At the necropsy, which was conducted 24 hours after death, the bacillus typhosus was obtained in pure culture from the spleen, which was absolutely normal in appearance. The agglutinins in the blood and spleen were estimated as above. The following are the results:—

—	Dilutions.				
	4-fold.	8-fold.	16-fold.	20-fold.	50-fold.
Serum of heart-blood	Complete.	Complete.	Complete.	Complete.	Complete.
Serum of spleen ...	Trace.	Trace.	Trace.	*Nil.*	*Nil.*

—	Dilutions.			
	100-fold.	150-fold.	200-fold.	300-fold.
Serum of heart-blood	Complete.	Incomplete.	Incomplete.	Traces.
Serum of spleen ...	*Nil.*	*Nil.*	*Nil.*	*Nil.*

[1] The term "bacteriotropic" which is here employed is formed upon the analogy of the terms "neurotropic," &c., which have been introduced by Ehrlich. The affix "tropic" as thus used signifies the property of "turning towards" and of entering into chemical composition with.

[2] In view of the fact that this and all the subsequent observations were made in the winter months, when the temperature of the dead house was very low—so low, in fact, that it held in check the growth of all putrefactive micro-organisms—it would appear justifiable to assume that the results which are exhibited above cannot have been due to any post-mortem cultivation of typhoid bacilli in the spleen. Vide also in this connexion note to Observations 5 and 6.

CASE 5.—The patient succumbed to a severe attack of Malta fever which ran a comparatively short course. Death took place in the third week of the disease. A necropsy was made 12 hours after death.[3] The micrococcus melitensis was obtained in pure culture both from heart-blood and spleen. It was obtained in small quantities from the former and in relatively large quantities from the latter. The estimation of the agglutinins in heart-blood and spleen was carried out in the same manner as in previous cases. The results were as under:—

	Dilutions.					
	4-fold.	10-fold.	20-fold.	50-fold.	100-fold.	200-fold.
Serum of heart-blood	Complete.	Complete.	Complete.	Complete.	Complete.	Incomplete.
Serum of spleen	Traces.	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*

CASE 6.—The patient suffered from a severe and long-continued attack of Malta fever. Death took place five and a half months after the commencement of the disease. At the necropsy, conducted 18 hours after death, the micrococcus melitensis was obtained in pure culture from spleen and heart-blood. The bacteria in the blood were few, while they were plentiful in the spleen. The estimation of the agglutinins which was conducted as above gave the following results:—

	Dilutions.						
	5-fold.	10-fold.	20-fold.	50-fold.	100-fold.	200-fold.	400-fold.
Serum of heart-blood ...	Complete.	Complete.	Complete.	Complete.	Incomplete.	*Nil.*	*Nil.*
Serum of spleen	*Nil.*	*Nil.*	*Nil.*	—	—	—	—

The above observations would appear clearly to establish that the spleen in the case of typhoid and Malta fever is much poorer in agglutinating substances than the circulating blood. So far as the spleen in typhoid fever is concerned our observations merely confirm what had previously been established by Courmont in the course of a research which he instituted with a view to determining the distribution of agglutinins in various parts of the body. The research in question showed that in nine cases of typhoid fever examined post mortem the agglutinating power of the spleen juice was in every case much less than that of the heart-blood. This fact, which was arrived at by us independently in following up an entirely different line of inquiry, seems to us to acquire a fundamental importance in view of its bearing on the question of the effect exerted by the agglutinins *in vivo*.

We may therefore proceed to consider the general bearing of the conclusion arrived at above, that the micro-organisms of typhoid and Malta fever cultivate themselves in the interior of the infected organism in a medium which is relatively poor in agglutinins. We may consider in this connexion first the case in which a relatively large number of bacteria are introduced into the subcutaneous tissue of a man or animal whose blood and lymph contain sensible quantities of agglutinins.

Before we embark upon this question we shall do well to place before ourselves two facts. First, we must note that when we introduce bacteria into an agglutinative medium we effect a corresponding reduction in the agglutinative power of that medium inasmuch as the agglutinins enter into chemical combination with the bacteria. Secondly, we must note that when the mass effect of the agglutinins in any medium is reduced beyond a certain minimum an agglutinative effect is no longer exerted by that medium. A plasma or lymph whose agglutinative power is reduced below a certain minimum[4] may therefore for our present purposes be regarded as a non-agglutinative fluid.

Keeping these points in view we are now in position to consider what will probably happen when a large number of bacteria are subcutaneously introduced into an organism which contains agglutinins. Here and throughout this paper we may, in considering the particular case of the agglutinins, bear in mind that we may draw inferences from what happens in the case of these to what will happen in the case of other anti-bacterial substances. It will be manifest that the bacteria when subcutaneously introduced will come in contact in the first instance only with the agglutinins which are contained in that quantum of lymph which occupies the meshes of that portion of the subcutaneous tissue which is the seat of infection. If now the bacteria have been injected in sufficient quantities to abstract from the lymph all or what for our purpose amount to all the agglutinins that lymph will be converted into a non-agglutinative medium. Within the non-agglutinative envelope which will thus have been formed such of the bacteria as have not been chemically affected by the agglutinins will be able to cultivate themselves perfectly unchecked, so far at least as any influence on the part of the blood is concerned. It may be urged that, seeing that the agglutinins which have been abstracted will be replaced either by the diffusion of others from the blood into the lymph or, failing that, by the transudation through the capillary wall of an agglutinative lymph, it will very soon come about that the bacteria in the tissue will again be exposed to the full "bacteriotropic pressure" of the blood. But consideration will show that where the bacteria have been introduced in relatively considerable quantities and where the agglutinative power of the blood is relatively low the passage of agglutinins outwards from the blood into the lymph will not under ordinary circumstances[5] suffice to keep up the agglutinative power of the lymph. For agglutinins will be abstracted from the lymph *pari-passu* with the increase of the bacteria which will be taking place.

At this stage we may pause for a moment to consider the bearing of these considerations on the prognosis and therapeutics of local bacterial invasions. First with regard to prognosis. The prognosis will, in conformity with the above considerations, be *pro tanto* good wherever the seat of infection becomes hot. For this local rise of temperature and the bright red colouration will be indicative of an increased afflux of arterial blood and of a correspondingly increased lymph-flow. Under conditions such as these the bacteria will not readily find an opportunity of establishing round themselves a non-bacteriotropic envelope. The prognosis will, on the contrary, be serious when local temperature falls and whenever cyanosis is developed at the seat of infection. For this will be indicative of an arrested or lessened arterial supply and of a consequent stagnation of lymph in the tissue. Under these conditions the bacteria will readily be able to establish round themselves

[3] In view of the fact that the results here and in the next case are similar in all points to the results obtained in the case of typhoid fever it is obvious that the inference which is drawn in Note 2 above is justified. For the results which are obtained here cannot be explained as being the results of a post-mortem cultivation of the bacteria in the spleen. This interpretation of the results is inadmissible in view of the fact that the post-mortem examination was here undertaken only 12 hours after death and that we are here dealing with a micro-organism which can hardly develop at all at temperatures below 37° C.

[4] The minimum concentration in which a lymph or serum will agglutinate may thus and *a priori* be expected to vary according as the micro-organisms which are exposed to it are virulent or attenuated bacteria. In the case of the former variety of bacteria—i.e., in the case of the variety of bacteria which are most adapted for preserving their vitality in the interior of the animal organism—we must assume that the cohesive forces which hold together the bacterial protoplasm are relatively more powerful. They are therefore more capable of resisting the disruptive force which is exerted on the bacterial protoplasm by the chemical affinity of the agglutinins or certain elements of that protoplasm. This *a priori* deduction is in conformity with the balance of experience, which is, we think, to the effect that a greater concentration of serum is required when virulent bacteria are to be agglutinated.

[5] We may remark in passing that if this holds true of the bacteria which lie free in the meshes of the subcutaneous tissue it will *a fortiori* hold true of bacteria which have been enclosed in a collodion bag. It does not appear to have been sufficiently realised by the observers who have employed these collodion bags in their experiments that a collodion membrane must inevitably, while it holds back the white blood-corpuscles, also restrain the lymph-stream which would otherwise be passing over the bacteria. Now it appears to us quite possible that it may be this restraint of the lymph stream rather than the holding back of the white blood-corpuscle which is the operative factor in favouring the growth of the bacteria. These same considerations would apply also to the enveloping pellets of agar which were employed by Vaillard in his well-known experiments with tetanus.

a non-bacteriotropic envelope and within this will be able to cultivate themselves unrestrained

Next with regard to therapeutic measures. The facts which have been considered above bring out very clearly that even where a sufficiency of effective anti-bacterial substances are contained in the blood the invading bacteria may none the less gain the upper hand if these anti-bacterial substances are not poured in a continuous stream through the invaded tissue so as everywhere to envelop the invading micro-organisms. This inference is in agreement, not only with the results of experiments on animals, but with the therapeutic principle which has been established by experience in the case of man, that exposure to cold exerts a prejudicial effect by increasing the susceptibility to infection, while the application of heat, either in the form of hot fomentations or in any other form, exerts a beneficial effect on local bacterial invasion. The explanation of this prejudicial influence of cold is to be found in the fact that it arrests the lymph-stream and thus permits of the bacteria cultivating themselves in a non-bacteriotropic medium. The contrary good effect of heat is explained by assuming that it increases the lymph-stream, and that it does so is shown by its effect in raising a blister.

Having briefly glanced at these questions we may now turn back and consider what is the bearing of the fact that micro-organisms cultivate themselves in the infected organism in a non-agglutinative medium, upon the phenomena which come under observation when the bacteria, which have introduced them into the subcutaneous tissue, are carried on by the lymph-stream into the blood. We may in this connexion with advantage consider what is the probable sequence of events when at the very outset of a typhoid or Malta fever attack the bacteria are carried on into the blood. At the particular stage we may assume that in a person who has not been previously immunised the agglutinins, if they are present at all, will be present only in very small quantities. Consequently we may assume that some at least of the invading bacteria will pass through the blood-stream quite unharmed. These will, in conformity with the general law which obtains when bacteria are introduced into the blood-stream, be deposited in the spleen and other internal organs. Having definitely established a lodgment there then bacteria will grow out into colonies, and each of these colonies will as it grows establish round itself a non-agglutinative envelope. As the result of this, and we have seen that the inference has been confirmed, the spleen will as a whole contain less agglutinative substances than the circulating blood. We may further assume that as the fever develops, and as the agglutinins and other anti-bacterial substances are produced in greater quantities, a period will arrive when the agglutinins will be present in the blood in sufficient concentration to permit of their penetrating and abolishing the non-agglutinative envelopes which surround individual colonies. This done the production of toxins will be arrested and the temperature will fall.

But if when this was affected there happened to remain over somewhere in the organism, shut off, for instance, in a capillary which had become blocked or in some other part which was not freely permeated by the blood-stream or the lymph-stream, a single bacterial colony, conditions would obviously exist which might afterwards lead on either to a relapse or to secondary local inflammatory process. For the bacteria, sheltered as they would be in the interior of such a non-bacteriotropic nidus, might go on cultivating themselves there until they had, as occurs before relapses in typhoid and Malta fever, modified the blood in such a manner as to render it less agglutinative. Such is the mental picture or theory of the typhoid and Malta fever process which is suggested to us by our observations. We have endeavoured to test the theory by controlling so far as opportunity offered the deductions which can be drawn from this theory by actual observations. With a view to doing this we endeavoured to determine whether the characteristic distribution of the bacillus typhosus in the infected organism (absence of the bacillus from the circulating blood and growth of the bacillus in discrete colonies in the spleen and other internal organs and in the typhoid spots) can be satisfactorily explained in conformity with the theory. The first point which attracts attention here is the absence of the bacillus typhosus in blood and the growth of that bacillus in the spleen in the form of discrete colonies. As we have seen from the comparative estimation of the agglutinins in the blood and spleen, this distribution accords well with the assumption that the agglutinins are an effective factor in checking the growth of the bacillus. It, however, appeared desirable further to test the correctness of this hypothesis, and it appeared that light might be thrown upon the question by determining whether in those septicæmic diseases in which bacteria ordinarily run riot all over the organism the bacteria would, after the introduction of antibacterial substances, be found to survive only in the form of discrete colonies in the organs. Opportunities for determining this point presented themselves in connexion with certain experiments which were made by one of us in conjunction with Lieutenant W. Glen Liston, I.M.S., on the effects of the introduction of Roux's anti-plague serum into the organism of plague-infected guinea-pigs. It was determined in the experiments in question that in the case of animals which had received sufficient quanta of serum such plague bacilli as survived were to be found only in discrete colonies in the organs. In the untreated control guinea-pigs the bacilli were, as usual, found in countless numbers in the circulating blood and all over the body. It would appear that the hypothesis enunciated above wins support from these observations.

With regard to the question as to whether the cultivation of the bacillus typhosus in the typhoid spots was or was not, as in the case of the cultivation of this bacillus in the spleen, to be regarded as a cultivation which is taking place in a non-agglutinative medium, it seemed possible to learn something by making comparative estimations of the agglutinating power of the blood from the finger-tip and of the mixture of blood and lymph which can be obtained by puncturing and pressing the typhoid spots. We have had only three opportunities of applying this test to the theory. In each case we made a comparative estimation of the agglutinating power of (*a*) the serum derived from a typhoid spot, and (*b*) the serum derived in the ordinary way from the finger-tip of the patient in question. The result of these comparative estimations (made in capillary sedimentation-tubes by methods employed above) were as follows:—

CASE 1.

—	Dilutions.				
	12-fold.	24-fold.	48-fold.	96-fold.	192-fold.
Serum from typhoid spots	Incomplete but marked.	Incomplete but marked.	Trace.	*Nil.*	*Nil.*
Serum from finger-tip ...	Complete.	Nearly complete.	Incomplete but very well marked.	Incomplete but very well marked.	Incomplete but distinct.

CASE 2.—*Child, beginning of the Second Week of Fever; Delirious; Copious Eruption of Rose Spots; Very Marked Improvement Supervened 24 Hours After.*

—	Dilutions.						
	12-fold.	24-fold.	48-fold.	96-fold.	192-fold.	384-fold.	768-fold.
Serum from typhoid spots	Reaction marked.	Marked.	Trace.	*Nil.*	*Nil.*	*Nil.*	*Nil.*
Serum from finger-tip ...	Reaction complete.	Complete.	Complete.	Complete.	Complete.	Complete.	Trace.

CASE 3.—*Child; beginning of the Second Week of Fever; Mild Attack; Copious Eruption.*

—	Dilution.				
	12-fold.	24-fold.	48-fold.	96-fold.	192-fold.
Serum from typhoid spots.	Mere trace.	Mere trace.	Mere trace.	*Nil.*	*Nil.*
Serum from finger-tip ...	Complete.	Complete.	Complete.	Trace.	*Nil.*

It will be seen that these observations, so far as they go, confirm the correctness of the theory enunciated.

GANGRENE COMPLICATED BY GLYCOSURIA.

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FOR many years medical science looked upon gangrene and other surgical diseases complicated with glycosuria as well-nigh hopeless and it is only recently that any hope of successful surgical interference has been offered. English text-books still describe gangrene complicated with sugar in the urine as a disease separate from senile or arterial gangrene, but it is probable that the true classification is that which puts senile gangrene and the so-called "diabetic" gangrene under the same heading and describes the latter as a complicated variety of the former. In mode of onset, clinical course, and termination the two are so alike as to be indistinguishable.

In the last 11 years there have been 26 cases (22 male and four female) of diabetic gangrene admitted to the wards of St. Thomas's Hospital. In 24 of these cases there has been an opportunity of examining the arteries and in every instance except one there has been well-marked atheroma. In this exceptional case it was simply stated that there was no apparent disease of the tibials. During the last five of these 11 years I have made a microscopical examination of the arteries and in every case found such arterial disease as would account for the gangrene. The average age of the patients in the cases mentioned above was just under 60 years, and this age, combined with the preponderance of males over females, seems to favour the theory that the disease is one of arterial origin.

Inflammatory conditions and neuritis have been assigned as the cause of the gangrene. Inflammation, of course, can cause gangrene when the process is intense enough, and doubtless it does cause it in diabetic subjects. At the same time the disease generally known as "diabetic gangrene" does not start in this way; the inflammation as a rule is grafted on to the already commencing gangrene. Peripheral neuritis is certainly an accompaniment of diabetes, but it does not occur with sufficient regularity to be considered as a cause, and neuritis, as shown clinically by the loss of tactile sensation, is often present in ordinary senile gangrene. The loss of parts produced by neuritis does not resemble that seen in the gangrene under discussion. It cannot be that poison in the blood directly causes gangrene, as if this were the case we should expect to see gangrene in young subjects in whom diabetes is most active. By far the most constant pathological condition is arterial degeneration, and it is to this that we must look for the causation of the disease. There seems no doubt that arterial degeneration accompanies diabetes and by some observers it is accredited to that disease. At the same time gout and kidney disease, both of which have some relation to arterial changes, often accompany diabetes. Endarteritis obliterans and syphilitic arteritis must be excluded before diabetes can be pronounced to be the cause. The former disease often occurs in comparative youth and may itself cause gangrene. The proportion of male and female diabetics is as two to one, but the proportion of males affected with gangrene is far greater.

CASE 1.—A man, aged 60 years, was admitted to St. Thomas's Hospital on Sept. 20th, 1893, with gangrene of the left foot which was caused by injury to the ball of the great toe 14 days before admission. The patient was an unhealthy-looking man but not wasted. On the head of the first metatarsal bone over its plantar aspect was an irregular sloughing ulcer with black edges and a zone of purple inflammation spreading over the plantar and dorsal surfaces of the foot and reaching to the ankle on the anterior surface. There was no pulsation in the anterior or posterior tibial arteries. The urine contained sugar. On the 29th, as the gangrene had extended and the patient was showing signs of septic absorption, the limb was ablated through the lower third of the thigh by the circular method. The femoral artery was found to be extensively degenerated and very brittle. The wound healed well except for some superficial sloughing of the edge of the skin to a limited extent. The convalescence was uneventful, except that on the fifth day after operation the patient became drowsy and the temperature fell to 95·4° F. The sugar decreased from about 1400 grains in the 24 hours until on Oct. 21st it ceased altogether. The temperature was practically normal throughout. White bread and starchy foods were excluded from the diet. The patient left the hospital on Nov. 9th and reported himself well on April 18th, 1894. At the end of a year his medical attendant said that the urine contained no sugar, but two years after the patient left the hospital he died from what is said to have been diabetic coma.

CASE 2.—A man, aged 60 years, who gave a history of syphilis, was known to have suffered from glycosuria for 13 months, but exhibited no other sign of diabetes. Since the discovery of sugar in the urine a diabetic diet had been adhered to. Three weeks before admission to the hospital a white spot was noticed on the plantar surface of the second toe. When the patient was first seen the second right toe was in a state of mummification, but at the base of the toes the gangrene became moist and a red blush spread on to the dorsum of the foot. The general condition of the patient was good and he was well nourished, but he was of the flabby type. There was no sign of general arterial disease. On the eleventh day after admission, as the gangrene was spreading, the limb was ablated in the lower third of the thigh by the circular method. The wound healed well and the patient left the hospital on the forty-ninth day. The amount of urine varied from 41 ounces to 78 ounces, its specific gravity ranged from 1042 to 1030, and the amount of sugar ranged from 96 grains to 1764 grains. The amputation had no effect on the sugar. The temperature was never above 100° F. The arteries were grossly diseased and showed much reduction of their lumen—a reduction which was especially marked in the tibials. The increase in the thickness of the walls was due to a proliferation in the sub-endothelial lining, the middle coat showing only a few patches of small round cells. 13 months after the operation the patient was about on crutches and suffered from temporary glycosuria which was relieved by diet.

CASE 3.—This case slightly differs from either of the above. The patient was a man, aged 50 years, who had suffered from a sore on the under surface of the first metatarsal bone for two years, during which time he lost five stones in weight. This ulcer became inflamed but eventually healed and latterly had given no trouble. 11 weeks before admission to the hospital the ulcer again broke down and discharged thin pus. On admission, on April 17th, 1898, there was a sinus over the plantar aspect of the first metatarsal-phalangeal joint and a probe introduced revealed the presence of a septic arthritis of the joint and necrosis of the whole of the first metatarsal bone. Around the sinus was a broad zone of cellulitis extending up to the ankle. The general condition of the patient was good and the wasting was not apparent. The temperature was 101° F. on admission but quickly fell to normal and never again rose above 100°. The urine had a specific gravity of 1030 and contained much sugar. There was no albumin. The diet was never restricted. On the 19th the limb was amputated through the lower third of the thigh. There was a fair amount of bleeding and the wound healed practically by first intention. On June 1st the patient was sent home, his condition having greatly improved. The femoral artery was not much decreased in size but the intima showed yellow patches of early atheroma.

Table of Sugar.

Date.	Specific gravity.	Total sugar.	Date.	Specific gravity.	Total sugar.
		Grains.			Grains.
April 15th	1030	1243	May 8th	1020	540
,, 16th	1028	1274	,, 11th	1026	540
,, 20th	1042	1530	,, 12th	1028	510
,, 30th	1044	961	,, 23rd	1020	252
May 1st	1038	671	,, 24th	1020	148
,, 5th	1040	648	,, 27th	1020	234

The amount of urine varied from 54 ounces to 24 ounces. The patient was again admitted into the hospital on July 27th, when he was free from all discomfort and both

looked well and expressed himself as feeling well. The specific gravity of the urine was now 1016 and it contained occasionally a trace of sugar. The patient was again seen on Oct. 26th. The specific gravity of the urine was from 1012 to 1020 and it contained about four grains of sugar to the ounce, making about 130 grains in the 24 hours. A bucket leg was ordered. The general health was excellent. In August, 1899, the stump was sound and an artificial limb was worn without discomfort. About 150 grains of sugar were passed in the 24 hours, but the patient maintained his weight. In this case it will be noticed that the patient was suffering from a perforating ulcer of the foot that had infected the joint and caused necrosis of the first metatarsal bone. The pus had found its way into the muscular planes of the foot and no local treatment seemed of any avail. There was no appearance of gangrene in the ordinary acceptation of the word. As the patient was evidently going down hill amputation was offered and accepted with the result that the sugar dropped in a marked manner and the patient at the end of a few months was able to wear an artificial leg, the sugar being still further reduced in quantity. This patient was given no drugs and took an ordinary diet.

CASE 4.—This case is interesting as showing how the sugar persistently followed the gangrene and also because of the presence of the neuritis. The patient was a man, aged 58 years, who in October, 1895, suffered from an attack of peripheral neuritis, from which he completely recovered with the exception that his second right toe remained anæsthetic and that his tendon reflexes did not return. The urine at this date contained no sugar but there was a trace of albumin. In March, 1896, the second right toe became gangrenous and separated in one month. The urine contained 10 grains of sugar to the ounce and had a specific gravity of 1025. In April and November in the same year the urine was tested and was found to be free from sugar. In January, 1897, gangrene started in the fourth toe of the right foot and gradually spread up to the ankle. The urine now had a specific gravity of 1030 and contained about 16 grains of sugar to the ounce while the quantity passed was large. On Feb. 28th the limb was amputated above the knee and the wound healed by first intention. In the following month the amount of sugar had fallen to three grains to the ounce and the quantity passed was very much less. In April the amount of urine was normal, but still contained sugar. In June the amount of urine was still normal, the health was good, and there was no thirst or other symptom of diabetes with the exception of a small quantity of sugar. The patient walked well on an artificial leg. The diet of the patient was never restricted at all. Microscopical examination of the arteries showed primary calcification of the muscular coat of the femoral artery with some increase of the intima. The tibials were decreased in calibre by proliferation of the intima. In the spring of 1898 gangrene attacked the other foot and the urine contained sugar. The patient refused amputation and died from septic absorption.

There is one striking fact in these cases, and that is the different behaviour of the sugar. In a certain number of instances the sugar is unaffected and the history of the case points to the glycosuria being present for some time before the gangrene started. The glycosuria, however, is not a prominent feature in the history, and it is, as a rule, only discovered when the gangrene has led to the urine being tested. Inquiry also often shows that the thirst and emaciation, if present, were only noticed after the appearance of the gangrene. The disappearance or diminution of the sugar opens the door to the supposition that the septic process is the cause of the glycosuria or at least aggravates it. It has been pointed out that glycosuria may arise from a surgical lesion. These lesions are of a septic nature and comprise erysipelas, cellulo-cutaneous erysipelas, abscesses, carbuncle, and other sloughing processes. Carbuncle is perhaps more often associated with a temporary glycosuria than other septic states. The following are instances of what fairly often happens.

CASE 5.—A woman, aged 65 years, was admitted into the hospital with a carbuncle of the back of seven weeks' duration. The urine contained 300 grains of sugar in the 24 hours. The slough was excised and the sugar disappeared from the urine in nine days and was still absent six weeks later.

CASE 6.—The patient was a man, aged 72 years, in whom the rectum was excised for carcinoma. After a few days the wound became very foul indeed and the urine, which before the operation was normal, was now found to contain sugar. The amount of sugar rose to 2376 grains in the 24 hours and fell to a trace in a month. The highest temperature was 101° F.

CASE 7.—A healthy woman, aged 36 years, was admitted into the hospital for an ulcer of the rectum and the urine was found to contain a large amount of sugar. The ulcer was excised and the glycosuria ceased entirely.

In none of the preceding cases was there any symptom of diabetes with the exception of the sugar, and the diet in each case was unrestricted. If the assumption that septic processes lead to glycosuria is correct we should expect to find that individuals who are suffering from septic diseases are nearer glycosuria than are normal subjects. Now it has been shown that all persons possess a saturation point, that is to say, that sugar will appear in the urine if a certain quantity of carbohydrate is taken at a meal. A healthy man can dispose of 300 grammes of glucose at a meal and yet none will appear in the urine. This is not so with a patient who is suffering from septic absorption, as in such a case 50 grammes of glucose will often pass into the urine. The glucose in the following cases was given about 6 A.M. and the smaller amounts were taken at a draught, but the larger amounts were spread over times up to two hours.

CASE 8.—The patient, a man, aged 31 years, was admitted into the hospital on May 29th, 1898, with diffuse cellulo-cutaneous erysipelas of the arm following a graze on the elbow eight days previously. The temperature was 103° F. and extensive sloughing of the skin had occurred. The urine was acid, with a specific gravity of 1020, and contained no albumin or sugar. On the 31st 100 grammes of glucose were given, and the urine passed in the next 12 hours was collected and found to have a specific gravity of 1020 and to contain sugar. Fermentation with yeast reduced the specific gravity to 1016. On June 23rd the wounds were healing well and the temperature was normal. The patient was now given 100, 200, and 300 grammes of glucose on succeeding days but no glycosuria resulted.

CASE 9.—The patient was a woman, aged 60 years, who was admitted into the hospital with gangrene of the middle finger of her right hand following a wound of the same finger two days previously. There was œdema up to the elbow and incisions in the finger and palm evacuated much pus. There had been an attack of shivering the day before that on which the patient was admitted. The urine was normal. Five days after admission 100 grammes of glucose were given and the urine passed in the next 12 hours contained sugar. A month later, when the finger had almost healed and the patient was convalescent, 100, 200, and 300 grammes of glucose given on successive days failed to produce any effect on the urine.

CASE 10.—A man, aged 54 years, was admitted into the hospital for a carbuncle on the neck of the size of a saucer, which he had had for six weeks. 50 grammes of glucose were given on two successive mornings and on the second occasion sugar was found in the urine, which on admission had been 1016. It was acid and contained neither sugar nor albumin. Fermentation reduced the specific gravity by four points. The carbuncle was scraped and 10 days later another 50 grammes of glucose were given and again sugar appeared in the urine. 50 grammes on the two succeeding days produced no sugar, nor did 75 grammes on the next day. A week later the patient was tested up to 150 grammes, but the urine continued normal.

CASE 11.—A man, aged 31 years, was admitted for lymphangitis of the forearm following an abrasion with a skewer. The temperature was 104° F. and the patient was delirious. 50 grammes of glucose produced glycosuria. When the patient was convalescent he was tested and found to resist 300 grammes.

CASE 12.—The patient was a man, aged 60 years, who 10 years previously had suffered from carbuncles. When he recovered from these he continued in good health until 18 months previously, when he was attacked by inflammation in his great toe, for which the nail was removed. The resulting wound was not healed at the date of his admission into the hospital in January, 1898. In October, 1897, the toes of the left foot became numb and the patient suffered from thirst and increased quantity of urine, both of which symptoms subsided before he came under observation. Gradually the second, the third, and the fourth toes of the left foot became gangrenous. On examination the toes were dry and mummified; heat, cold, and tactile sense were diminished in

both feet, but the sense of pain was acute except in the gangrenous area. The urine was acid, its specific gravity was 1020, and there was no albumin. Fehling's solution gave invariably a yellow discolouration in the upper heated zone of the urine. On Feb. 17th, 1898, Syme's amputation was performed and 10 days later, in consequence of the sloughing of the flaps, there was lymphangitis all up the leg. On the 26th and the four following days 50 grammes of glucose were given in the morning and the urine passed on Feb. 28th and March 1st, 2nd, and 3rd contained sugar as shown by the usual tests and fermentation. On the 4th amputation through the thigh was performed and the wound healed well. On the 13th and following days the patient was tested up to 100 grammes, but the urine continued normal.

CASE 13.—A man, aged 72 years, was admitted into the hospital with senile gangrene of the left foot of three months' duration. The gangrene was of the usual type, the toes being mummified and a zone of inflammation spreading up on to the foot. The temperature was practically normal. On April 6th, 9th, and 10th glucose was given, commencing with 100 grammes and going up to 300 grammes. On the last occasion sugar appeared in the urine. The leg was removed through the thigh on the 8th. The wound healed well and on May 1st and following days the patient was tested with glucose and it was not until 500 grammes were taken that sugar again appeared in the urine.

The first seven cases in the series last quoted were cases of simple septic absorption due to various causes; the last two were cases of the disease under discussion. In some instances the temperature was raised, and this is in some cases apparently enough to give rise to a potential glycosuria. The absence of any elevation of temperature in the other instances proves that fever is not necessary to produce potential glycosuria. The fact that when the septic focus was removed the patients resisted the glucose shows that the glycosuria was only a temporary effect of the disease from which they were suffering.

TREATMENT.

Of the 26 patients whose cases were mentioned at the beginning of this paper 15 died. 11 cases were submitted to operation and in these seven of the patients died, while of the 13 patients treated with palliative measures eight died and the remaining five were discharged unrelieved. In two cases the affected toes were amputated and a diabetic diet was ordered. These patients were both discharged as cured with the urine free from sugar. One returned in five months with a recurrence of the gangrene and was sent away unrelieved and the other also came back within the year with glycosuria and gangrene in the other foot which healed under antiseptics and opium, the sugar again disappearing from the urine. Three cases had been treated by amputation of the toes before admission and of these two patients died and the other was unrelieved. Amputation through the leg was tried in three instances and was fatal in every case, the flaps sloughing in one. Amputation through the condyles was also fatal but the flaps were healthy. Circular amputation through the lower third of the thigh was practised in six cases and was fatal in two instances. Of two patients with albuminuria one was amputated through the thigh and the other through the leg. The latter case ended fatally.

If diabetic gangrene is really a senile gangrene it should be treated on the same lines as that disease. The question arises how far the treatment should be modified by the presence of the sugar in the urine. Experience has shown that the fear of local sloughing is practically non-existent or, at any rate, has been greatly exaggerated. In gangrene of the leg the flaps may be expected to heal well provided the limb is removed sufficiently near the trunk, so that the blood-supply may be fairly good. Local measures nearly always end in disaster as in simple senile gangrene. If diabetic symptoms are well marked we cannot hope for much improvement in this direction; but even here some amelioration may take place, while in those in which the glycosuria is not excessive and is unaccompanied by other symptoms we may expect the loss or great reduction in the quantity of sugar passed and therefore a constitutional improvement.

The next question is whether we run a greater risk of losing the patients from coma if we operate than if we allow the gangrene to run its course. I think the cases reported above show that we do not. It has been remarked that there seems an irresistible inclination to attribute all deaths in diabetic patients to coma. Before this is done the effect of sepsis must be eliminated, and it is well to remember that the subjects of senile gangrene die after operation in a manner which is identical with that which occurs in diabetic gangrene. If cases are left unrelieved, whether glycosuria is present or not, until there is muttering delirium and dried tongue the result will nearly always be unfavourable. Albuminuria has been said to be a contra-indication to operation. I think that this should only be considered when it seems probable that the albumin is due to septic absorption and is combined with the other signs of that affection. Albuminuria often accompanies arterial degeneration, as in gout and renal disease, and therefore it should not of itself preclude amputation.

CONCLUSIONS.

1. That it yet remains to be proved that true gangrene (excluding death from acute specific processes which may occur in any subjects and at any age) occurs in diabetic patients unaccompanied by such arterial disease as would of itself produce the gangrene.
2. That the glycosuria may or may not precede the gangrene, but is not usually accompanied by other signs of diabetes.
3. That septic wounds may produce a glycosuria which vanishes when the septic process is removed.
4. That individuals suffering from septic processes are often on the borderland of glycosuria.
5. That gangrene may aggravate a pre-existing glycosuria.
6. That the arterial disease is sometimes that which accompanies, or is produced by, chronic renal disease.
7. That it has yet to be proved that neuritis can produce any gangrene comparable to that of the so-called diabetic gangrene.
8. That the best chance of recovery is offered by removal of the limb near the trunk and that this measure should be undertaken before the patient is reduced by septic absorption.
9. That the presence of glycosuria may be an indication, instead of a contra-indication, for operation.

My best thanks are due to the surgical staff of St. Thomas's Hospital who have kindly allowed me to use some of their cases.

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St. Thomas's Hospital, S.E.

REMOVAL OF A HAT-PIN FROM THE STOMACH.

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ACCOUNTS of the swallowing of foreign bodies are so frequent and the articles are so varied that it is always interesting and valuable to place on record the results of operations performed for the removal of such foreign bodies. I cannot but note the extremely favourable results which laparotomies and gastrotomies present when performed for the removal of bodies which have been swallowed and the amount of handling and exposure which the abdominal viscera will endure under such circumstances with so great a freedom from consequent shock and fever. Again, such cases teach us frequently that we must not embrace too eagerly or attach too much importance to any subjective symptom complained of, for probably in no instance are subjective signs more likely to differ from the objective or to be more misleading than in abdominal affections. This is evidenced in the case recorded by Mr. Mansell Moullin in which the patient localised the pain to the front of the chest one and a half inches from the middle line and a short distance above the nipple in front and a little to the left of the third dorsal vertebra behind, the foreign body being at that time at the ileo-cæcal valve. In the case recorded below the pain was localised in the left iliac region and the foreign body—a hat-pin four and a half inches long—was removed from the stomach. It is also interesting, in comparing Mr. Moullin's case with mine, that both women swallowed a hat-pin and that in both cases four days elapsed before operation. In Mr. Moullin's case the pin travelled

along the intestine till it reached the ileo-cæcal valve, in which position it was found; and it is almost incredible to believe that a sharp pin four and a half inches long could pass the tortuous and in places acutely bent track of the small intestine without laceration or some other serious damage. In my own case, on the other hand, the pin never passed beyond the stomach; in fact, when found it was lying in that viscus as though it had never turned or been disturbed in any way.

On Dec. 3rd, 1897, the patient, a woman, 60 years of age, was eating a crust of bread. It stuck in her throat and she unsuccessfully attempted to push it down with her finger, and then feeling herself suffocating she passed a bonnet-pin down head first, hoping to dislodge it. In doing this the point of the pin stuck fast in her palate and only with difficulty did she manage to disengage it. In doing so she loosed her hold of the pin and it slipped down her throat. She thought very little of the accident, believing that the pin would soon pass from her, and to accomplish this end she took strong purgatives. She experienced little inconvenience till the 5th, when she felt a pricking pain in the abdomen high up in the epigastric region. She was admitted to the Winchcombe Cottage Hospital. On examination on the 7th nothing could be felt by external manipulation, but on deep pressure over the left iliac fossa she complained of sharp pricking pains and of similar pains in this locality when she moved, coughed, or stooped. The pain had completely moved from the epigastric region; there was no sickness, the motions were normal in colour, and the patient was quite free from pain when still. Her temperature before the operation was 99·4° F. On the 7th, the patient having been prepared for operation by all solids being withheld for 24 hours and a good enema having been given so that the bowel was fairly empty, she was put under chloroform by my colleague, Mr. Cox. The abdominal walls were rendered aseptic by a carbolic pad which was worn for four hours previously to the operation. An incision three inches long was made downwards in the middle line from one and a half inches below the umbilicus. The bowel, being much distended with flatus, immediately protruded. I passed my hand down to the left iliac region where the sensation of pricking had been experienced but could find no trace of the pin. Believing that she might have exaggerated the size of the body swallowed I carefully examined inch by inch the coils of intestine in this locality, but again with negative result. I next enlarged the incision upwards to the extent of one inch and passed my hand towards the stomach and after much difficulty I detected the shaft of the pin lying in that organ. The head lay upwards and to the right and the point downwards and to the left. The point was embedded in the posterior wall of the stomach and I found it impossible to extricate it by manipulation owing to its being so far from the abdominal incision. From the position of the pin I concluded that the best course to adopt was to draw it through the hole which was already partially made by its point, and consequently, with a finger guiding its point, I made steady pressure on the head over the anterior stomach wall and ultimately succeeded in bringing the shaft of the pin (see illustration) through the posterior wall of the stomach

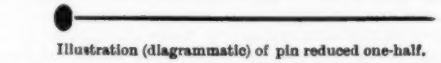

Illustration (diagrammatic) of pin reduced one-half.

and the descending layer of omentum. Abandoning my original intention of incising the stomach wall and extricating the head of the pin, I made gentle traction on the shaft and carefully passing a pair of bone forceps along it I nipped the shaft through close to the stomach wall, leaving the head free in that viscus. I experienced very great difficulty in replacing the highly inflated bowel. This was eventually done by means of pressure with warm sponges and the abdominal incision was closed with silkworm-gut. I employed four deep interrupted sutures, including all the thickness of the parietes except the parietal peritoneum, and six smaller superficial sutures were distributed amongst these. The wound was dusted with iodoform and boric powder and a dressing of wet mercury and zinc cyanide gauze and a thick pad of Gamgee tissue included in a many-tailed bandage were applied. A nutrient enema of beef tea containing one ounce of whisky was given. On the evening of the day of operation a hypodermic injection of one quarter of a grain of morphia was given on account of some pain which was speedily relieved. The patient took by the mouth a little iced water and occasional drops of milk up to the 10th, being fed up to this date by nutrient enemata and on this date the bowels acted slightly normally. From the 11th the patient was given a more solid diet, consisting largely of fish and suet dumplings, to ensure the passage of the pin-head over the appendix. The first suture was removed on the 16th. An oil enema was given on the 18th which brought away the head of the pin. The patient was up wearing an abdominal belt with the wound quite healed on the 23rd. There was no fever throughout the case.

Winchcombe.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

INVOLUNTARY REDUCTION OF DISLOCATION OF THE SHOULDER.

BY E. IRVING DAY, L.R.C.P. LOND.

I WAS called to see a woman who was reported to have fallen and injured herself. On examination I found that she had dislocated her right shoulder by the fall, the symptoms being quite typical and unmistakable. I made a somewhat mild attempt to reduce the dislocation, but she complained so much of the pain that I thought it advisable to use an anæsthetic for the purpose—indeed, she would not bear of my doing anything further without its aid. Having omitted to bring any with me and the hour being rather late I decided to call in the morning, which I accordingly did, armed with the necessaries I required. On uncovering the shoulder I at once noticed a difference and soon found that the dislocation had been reduced. I asked her what had happened and she told me that she had fallen asleep with her injured arm on her lap, as I had left it, within a sling. She was sitting in a chair, as she had too much pain in her shoulder to wish to go to bed. Having been asleep about half an hour she woke up with a start; she felt herself slip slightly downwards and at the same time felt a violent pain in her injured shoulder which almost made her faint. On recovering herself the pain was all gone and she felt so much better that she got into bed and slept the remainder of the night. She felt that "something had happened," but hardly dared to think that her shoulder was all right again. However, it was so, and the case is a good illustration of how easily a dislocation can be reduced when the muscles are relaxed, if only in sleep. I may say that the woman was of stout build and that she had never previously dislocated the joint. The dislocation was the normal sub-coracoid variety.

Henley-on-Thames.

A CASE OF INFANTILE HEMIPLEGIA ASSOCIATED WITH APHASIA.

BY F. W. ERNEST HUTCHISON, M.B., M.S. GLASG.

THE patient, a male, aged two years, on Oct. 3rd, 1899, whilst playing, fell off a doorstep and when picked up was found "to be paralysed and unable to speak." I saw the patient about two hours afterwards. The right arm, leg, and lower part of the face and tongue were paralysed, especially the leg and arm. The angle of the mouth was drawn upwards and to the sound side. There was complete absence of speech. The little patient did not appear to comprehend anything that was said to him. Articles which he had been very fond of playing with and previously knew well by name now appeared quite incomprehensible to him when he was asked if he would like so-and-so, but directly they were exhibited to him he changed his expression to one of comprehension, smiled with delight, and wished for the same. The previous health had been good, and he had never suffered from scarlet

fever, whooping-cough, or measles. He had always been a happy, lively little fellow. The fact that the onset of the paralysis had been so sudden indubitably pointed to the lesion being a vascular one. I carefully examined the heart but there was no valvular or other trouble. Indeed, the organ appeared to be perfectly sound. The urine was normal. The cause would appear to be due to a rupture of the left middle cerebral artery. The pathology of infantile hemiplegia is well known to be shrouded in obscurity and is scarcely alluded to by writers. Strumpell's view that some of these cases are due to polioencephalitis cannot apply to this case on account of its very sudden onset and previous good health, although (I ought to have mentioned it before) the child was suffering from an intractable form of eczema of both of the lower extremities when taken ill. I might otherwise have given some colour to Strumpell's view. The treatment of the case was pursued on similar principles to that of adult cases and after a little time from half to one-minim doses of liquor strychninæ were given, alternating with two-minim doses of diluted phosphoric acid. The patient at first grew much worse and I almost felt sure he must die. However, after I put him on the strychnine he began at once to improve. He grew stronger and slight movement appeared in the leg and a little later in the arm, but he was still quite speechless and stupid. The patient remained under my care for about six weeks, when he had to be removed to his home some distance off. Just before he left he had recovered very largely the use of his leg and arm but complete aphasia was still present. Quite recently I heard from his friends that he had grown very weak in every respect and the only thing he could say was "dada."

Kelvedon, Essex.

LACTATION IN A MALE INFANT.

BY GEORGE M. BLAIR, M.B., CH.B. GLASG.

I WAS consulted a few days ago by a woman whom I had lately delivered of a male child at term. She complained that her infant was losing flesh and was suffering from excessive vomiting and sleeplessness. On examination the child exhibited two highly developed mammæ in size about that of two walnuts and on slight pressure of the right mamma a quantity of milk oozed out. The woman informed me that she had noticed the swelling of the breasts and the flowing of milk for some time and had lately got anxious as to the cause. With the exception of the scrotum, which at present only contains on palpation one testicle, the external genitals and other parts are normal. This is the woman's second confinement, but in the former one the child only lived a few hours and nothing remarkable was noticed. I am indebted to Mr. Evan Jones, whose practice I am at present attending, for kind permission to publish the above.

Goswell-road, E.C.

WATER-SUPPLY OF MALMESBURY (WILTSHIRE).—At a meeting of the Malmesbury Town Council held on Dec. 12th the water-supply of the town came under discussion. The medical officer of health (Mr. C. W. Pitt), who reported two fatal cases of typhoid fever, stated that the water was deleterious to health, and the county medical officer of health also said that unless the water was previously boiled it was unsafe for drinking purposes. After a considerable discussion it was decided to approach the company with a view to the Council purchasing the waterworks.

TENURE OF OFFICE OF MEDICAL OFFICERS OF HEALTH.—At a meeting of the Okehampton Rural District Council held on Dec. 9th a letter was read from the Local Government Board stating that they had under consideration generally the question of the tenure of office of medical officers of health, and where, as in the case of Dr. E. H. Young, the medical officer of the rural district of Okehampton, a medical officer held a diploma in public health they would be prepared to consider favourably an application for sanction to his re-appointment without limit of time. The communication added that if the rural district council were willing to so appoint Dr. Young they would be willing to sanction the re-appointment accordingly. The council eventually decided to re-appoint Dr. Young without limit of time.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WEST HAM HOSPITAL, STRATFORD, E.

A CASE OF ISCHIATIC HERNIA.

(Under the care of Mr. W. A. GROGONO.)

IN the few cases of hernia through the sciatic notch which have hitherto been described it has been situated at so great a depth that it has not been noticed during life. The hernia is described by Sir Astley Cooper as passing between the lower border of the pyriformis muscle and the spine of the ischium. In its clinical manifestations, this closely resembles an "ischio-rectal hernia," of which a very good instance was described by Mr. J. Lynn Thomas in THE LANCET in 1897,[1] and we are somewhat inclined to think that the following case was really an ischio-rectal hernia. For the notes of the case we are indebted to Dr. R. Niven, house surgeon.

A young woman, aged 22 years, was admitted into the West Ham Hospital on Nov. 23rd, 1899, under the care of Mr. Grogono. When she was admitted she complained of pain on sitting and of a swelling in the left buttock. In August, 1898, she fell from a window ledge on to the floor, a distance of about three feet, alighting in the sitting posture. She experienced pain on sitting down for two or three days after this fall. She had slight pain occasionally on sitting until January, 1899, about which time the pain became more constant, the act of sitting always causing considerable pain in the left buttock. About this time also she noticed that the left buttock felt considerably harder to touch than the right. In June, 1899, she again fell in the same position, and since then the pain had been more severe. Shortly after the second fall she observed that the left buttock was somewhat larger than the right, and the swelling gradually increased in size till about three months before admission, when it apparently ceased to enlarge. She had not noticed any increase in the size of the swelling during the past three months. The patient stated that on sitting down she sometimes experienced a sensation of "something moving" in her abdomen. Her bowels had always been regular. There was no pain on defecation.

On Nov. 24th the patient was seen to be a well-nourished, healthy looking girl. The left buttock was occupied by a tense, well-defined, and almost spherical tumour situated principally to the inner side of the tuberosity of the ischium. The swelling measured about two and a half inches in diameter both vertically and horizontally. The superficial veins over the swelling were enlarged. There was no reddening of the skin which was freely moveable over the swelling. A slight impulse could be made out on coughing. There was considerable tenderness on firm pressure, the tenderness being most marked when the swelling was pressed against the ischial tuberosity. No pain was experienced except when the patient sat or lay on the affected side. The pain was described as being of a sickening character. The hip-joint and the sacro-iliac articulation appeared to be normal. The bowels were regular. The temperature was normal and the pulse was full, slow, and registered 72 beats per minute. Rectal examination revealed a slight bulging on the left side. There was no tenderness in the rectum.

The diagnosis rested between hernia, lipoma, chronic abscess, and chronic bursitis, and it was decided to make an exploratory incision. Accordingly, on Nov. 26th an incision was made over the swelling dividing the skin, subcutaneous tissue, and fascia. A large loop of small intestine was found in a thin-walled sac of peritoneum, protruding at the inner border of the gluteus maximus and resting on that muscle. The hernia was felt to be protruding through

[1] THE LANCET, July 24th, 1897, p 191.

the great sacro-sciatic foramen. The index finger could be passed along the neck of the sac through the foramen. The bowel appeared to be perfectly normal. As a radical operation was considered to be impracticable no attempt was made to reduce the hernia and the wound was closed.

Remarks by Mr. GROGONO.—This case shows, in my opinion, that the sensations of the patient should not be too lightly passed over. Had I paid more attention to the statement of the patient that she felt "something moving" in her abdomen on sitting down I might have been able to arrive at a positive diagnosis of the case.

SHEFFIELD ROYAL INFIRMARY.

THREE OPHTHALMIC CASES.

(Under the care of Mr. SIMEON SNELL.)

THE case of papillitis recorded below is a good example of an important sequela of influenza. There is no tissue of the body which is not liable to be involved in this disease, so remarkable for the number and variety of its sequelæ. Dr. Weeks, in the *New York Medical Journal*, 1891, has collected several similar cases. With regard to the third case the eyelids are not very rarely the seat of ectopic primary syphilitic sores, but it is difficult to assign any reason for their occurrence in this situation. It has been stated that attacks of syphilis arising from ectopic sores are more severe than those due to sores in the usual situations, but this idea is probably due to the fact that extra-genital chancres are frequently not diagnosed early. For the notes of the cases we are indebted to Mr. J. Wilfred Stokes, late assistant house surgeon.

CASE 1. *Embolism of the arteria centralis retinæ.*—A man, aged 60 years, attended at the Sheffield Royal Infirmary on Nov. 8th, 1897, and stated that at 6.15 A.M. that morning while stooping to tie his bootlace his right eye became suddenly blind; after this for about half an hour there was some slight pain over the right eye and right side of the head. When the patient was first seen at 11 A.M. the condition was as follows. With the right eye there was the faintest perception of light, the pupil was somewhat dilated and fixed, the fundus was pale, and the arteries were empty and barely distinguishable; the veins were, generally speaking, also empty but in one or two a column of blood was noticed. The appearance this latter presented was very distinct, as on either side of the column the lumen was observed as empty. There was no distinct "red spot" at the macula and there was an absence of the effusion so generally seen in cases of embolism of the central artery. At the emergence of the artery from the disc there was a small spot suggestive of the embolism and the effect on the vessels was more marked in the descending arteries, as if the plug interfered more with the flow of blood through these vessels than it did through the ascending branches. Mr. Snell immediately commenced to massage the globe and after this had been continued for a few minutes a marked change was evident; the general pallor was lessened and the column of blood in the vein already especially alluded to was lengthened. Later the veins and arteries appeared to be charged with blood. At 4 P.M. the patient was again seen when it was found that there was blood in the arteries and that to a considerable extent circulation had been restored. The next morning he was again seen by Mr. Snell. The patient could then count fingers and the appearance in the fundus presented a marked contrast to what it had done on the previous day. Both arteries and veins contained blood though the fundus was still pale when compared with the left. Two days later a change had again taken place. He could no longer count fingers and the arteries had become markedly altered, appearing like threads. On Dec. 20th the optic papilla had passed into the white atrophic condition usually seen after embolism of the artery. The patient's past history and general present condition were good; there was no history of any illness. The heart sounds were normal, the first sound perhaps being weak; no murmur was heard. The urine was of specific gravity 1010, clear, pale, and neutral, and contained no albumin. The patient was a heavy drinker.

CASE 2. *Post-influenzal papillitis.*—A well-developed girl, aged 18 years, attended at the out-patient department of the infirmary on Nov. 5th, 1897, complaining of defective vision. She stated that her sight had been good until a month previously when she was just out of bed from an attack of influenza which had confined her there for a fortnight. The history of this illness was that six weeks previously while at work in a razor factory she was suddenly taken ill with pains in her head, back, and neck, and a feeling of general malaise. She was unable to continue at work and took to bed where she remained for a fortnight; the chief symptoms of her attack were vomiting and the above-mentioned pains. She noticed nothing wrong with her sight until she left her bed, when she discovered that she could not read. Subsequently her sight had remained about the same. There was nothing else of interest in her past history. She had never worked in lead or suffered from plumbism; there was no history of chorea, rheumatic fever, or scarlet fever. The urine was of specific gravity 1013, acid, and contained no albumin or sugar. On examination a convergent strabismus of the right eye was seen. There was no nystagmus. The pupils reacted well to light and to accommodation. The vision in each eye was $\frac{6}{36}$. The patient could not read small print in Jaeger's types. Examination of the fundus disclosed well-marked papillitis in each eye.

CASE 3. *Chancre of the upper eyelid.*—A girl, aged seven years, was admitted into the infirmary on Nov. 12th, 1897. A pimple had been noticed on the right upper eyelid a few weeks before admission; this had later developed into an ulcer which at the time of her coming under observation involved a considerable portion of the lid. The whole eyelid was much swollen and indurated; the ulcer occupied the central two-thirds and was emitting a scanty discharge. The glands behind the angle of the inferior maxilla were much enlarged, but, unlike what is usual in cases of chancres of the eyelid or conjunctiva, the pre-auricular gland was not implicated. Two days after admission a rash appeared all over the front of the chest and abdomen and extended down on to the thighs; this after a few days began to fade and disappeared in about ten days. On Dec. 21st the eyelid was much reduced in size and the red area was limited to a small portion at the centre of the lid. The enlargement of the glands had disappeared. At the time of admission the child was put on a course of mercury internally. No history whatever as to the source of infection was obtainable.

ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN, BRISTOL.

A CASE OF VERY ACUTE DIABETES IN A BOY, AGED FIVE YEARS.

(Under the care of Dr. E. LEONARD LEES.)

IT has been frequently pointed out that diabetes mellitus is a more serious disease in childhood than later and that, as a rule, as the age increases the acuteness of the symptoms diminishes. Nocturnal incontinence of urine suddenly arising in a child should always suggest the possibility of diabetes. A case in many ways similar to the one recorded below was published in THE LANCET in 1896,[1] though the course was a little less acute. In these rapid cases any sudden insistence on an absolute anti-diabetic diet or a great limitation of the amount of water taken seems to predispose to the onset of coma. For the notes of the case we are indebted to Dr. W. A. Milligan, resident medical officer.

A boy, aged five years, was admitted into the Royal Hospital for Sick Children and Women, Bristol, at 2 P.M. on June 30th, 1899, under the care of Dr. Lees. On admission the patient was seen to be in a very weak state; he was very much wasted, had a sallow complexion, and complained much of thirst, constantly asking for water to drink. The most marked symptoms at a first glance were the rapid sighing breathing (40 per minute) and the restlessness. The pulse was 140 and the temperature was 97·4° F. The tongue was coated with a thick fur, the breath, however, having a distinctly sweet smell. The heart and lungs were normal. The knee-jerks were exaggerated.

The history of the case as obtained from the parents was that 10 days before admission the patient was very constipated, so much so that his father, who is an asylum attendant, administered enemata on three successive days with good result and much relief. Besides this, and

[1] THE LANCET, Nov. 14th, 1896, p. 1376.

previously to this, nothing else was noticed until five days after the onset of the constipation, when the boy commenced to vomit and complained of thirst. During the next three days these symptoms became distinctly worse, and the boy seemed to be losing flesh rapidly. A medical man was called in and recommended his transference to the hospital. On making direct inquiry from the parents as to whether there had been any urinary symptoms it was found that the only point which had called for the least remark in this direction was that for two nights previously to admission there had been incontinence of urine, a thing which had never before occurred. As soon as possible after admission a specimen of urine was obtained and this on examination was found to be very light-coloured, with a specific gravity of 1030, acid reaction, and containing sugar in large quantity and also a considerable amount of albumin. Codeine pills and antidiabetic diet were prescribed. During the night the patient grew very much worse, the respirations increasing in rapidity, and the constant cry for water continuing unabated. The following morning the temperature was still subnormal, the pulse being 160 and the respirations 56, and the previous restless condition was now passing into one of drowsiness, to be followed by one of coma, and finally, at 4.30 P.M., by death.

There is nothing special to note in the previous history of the patient except that he had never been very strong, having suffered from a severe attack of bronchitis when two years old. The family history was good, there being no history on either side of the house of any diabetic trouble; there was no tuberculous history.

Necropsy.—There is nothing very much to record as the result of the post-mortem examination. The brain was firm and resistant, nothing abnormal being observed. The heart and lungs were normal. Examination of the kidneys revealed slight congestion of the Malpighian bodies; otherwise the kidneys were healthy. Macroscopic and microscopic examinations of the pancreas revealed nothing abnormal. The liver was normal.

Remarks by Dr. MILLIGAN.—The case seems to me to present some features worthy of being recorded. Dr. J. H. Sequeira[1] has pointed out that diabetes in the young is not uncommon, his patient being three years of age; nevertheless, the present case, from the extremely short duration of any apparent symptoms, is, I think, worthy of note. The interesting points are as follows:—1. The extremely short duration of any apparent symptoms. It was not until 10 days before admission that anything was noted as wrong with the boy and even then only constipation. Five days after this symptoms began to appear which led the parents to think that something was wrong, but it was not until two days previously to admission that any alarm was felt and a medical man was called in. 2. With regard to the urinary symptoms the only one that called for any attention on the part of the parents was that for two nights previously to admission there had been incontinence of urine. Unfortunately, the exact amount of urine passed after admission and hence the exact percentage of sugar present could not be estimated as a very large quantity was passed unconsciously in bed. The presence of albumin along with the sugar is worthy of note, as when this combination occurs the prognosis is said to be very bad indeed. 3. Heredity, which is said to be a common factor in diabetes in the young, plays no part in this case (cf. Dr. Sequeira's case). 4. The presence of the sweet smell in the breath is said to be an important sign of shortly impending coma. In the above case such was the case. The onset of the coma was more than likely hastened by the excitement caused by the removal of the patient into the hospital. On the morning of the day of admission the parents said that the patient had been very bright and on the whole seemed to be better. The type of coma in this case would come under Type 3 of Dr. Dreschfeld's "Types of Diabetic Coma"—i.e., coma following muscular weakness, drowsiness, and a rapid breathing. I am indebted to Dr. Lees for permission to publish this case.

[1] THE LANCET, July 15th, 1899, p. 144.

TRURO SEWAGE SCHEME.—The Truro Corporation have adopted the aerobic bacterial oxidising process of the International Purification Syndicate for the treatment of the sewage of the town.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

The Pathology of Tabes Dorsalis and its Relation to General Paralysis of the Insane.

A MEETING of this society was held on Dec. 19th, Mr. WATSON CHEYNE, the President, being in the chair.

Dr. CHARLES E. BEEVOR, in continuing the discussion on the Pathology of Tabes Dorsalis and its Relation to General Paralysis of the Insane, said that with regard to the first question he thought that if the two morbid conditions were one and the same disease it meant that a common cause acted pathologically on different parts of the system and produced symptoms which alternated with each other, and that therefore the majority of cases of tabes should tend to show symptoms of general paralysis and *vice versâ*. He did not think that in the earliest stage general paralytics showed symptoms of tabes otherwise than the Argyll-Robertson pupil; that as a rule the knee-jerks were increased, and they had no lightning pains. He thought it was the exception rather than the rule for cases of tabes to end as general paralysis, and most cases of tabes died without showing any symptoms of general paralysis. He called attention to the slowness of the symptoms in tabes compared with general paralysis and instanced three cases which had not increased during the last eight or ten years. With regard to the second question he could not understand why in general paralysis the cells of the Rolandic motor area were affected while in the spinal cord in tabes changes were almost confined to the sensory side. He instanced, by way of contrast, amyotrophic lateral sclerosis where the cells of the motor cortex were affected and where the motor parts of the cord suffered, not the sensory. With regard to syphilis he had found, in 39 of his cases of tabes, syphilis in 11, a chancre without secondaries in seven, gonorrhœa without a chancre in 10, doubtful gonorrhœa without a sore in five, and no history of venereal disease in six. In the majority of the cases of general paralysis he had seen there was a history of syphilis. The cases of syphilis in tabes had been of a mild character and the disease had been contracted 10 or 12 years before the first symptoms of tabes. He considered that general paralysis and tabes were dependent very largely (if not entirely) on the action of syphilis on the nervous system; but as it seemed to be the exception rather than the rule for tabes to be followed by general paralysis he thought that until, in the majority of cases of tabes, changes in the cerebral cortex were found he should not like to consider them as one and the same disease. He would rather look upon them as two diseases occurring in the same person at the same time. He thought that the prognosis of tabes would have to be considered more unfavourably if the majority of cases of tabes were to become general paralytics.

Dr. HENRY HEAD said he had lately been engaged in studying the sensory disturbances and the course of the sensory fibres in tabes. He had also examined the effects produced by lesions in a ganglion such as those of herpes zoster; and also the structure of the root ganglia in various regions of the cord. Tracing the nerve fibrils from a root ganglion of the lumbar region centripetally, when the ganglion was diseased, as in the lesion of herpes zoster, the fibres passed into the cord and became Goll's column. The fibres coming from one of the cervical ganglia could be traced to the postero-external columns, right up to the nuclei of the posterior columns. But in the dorsal region matters were very different. The fibres from a ganglion in the mid-dorsal region (say, the seventh) passed into the cord and could not be traced higher up than about five segments. Thus in the dorsal region the long fibres—i.e., fibres going in long tracts of the postero-external columns—were comparatively few in number, and Goll's columns were made up almost entirely of fibres coming from the lumbar region. He referred to some observations which had been made on the structure of the root ganglia, which showed that the cells and their arrangement in the dorsal region differed considerably from those in the lumbar and cervical regions. The cells were arranged in two groups. In the ganglia of the cervical and lumbar regions the large cells with curled processes ending in a T-piece preponderated, while in the

ganglia of the dorsal region the small cells with straight processes preponderated. There was only one certain alteration of sensation in tabes and that was the loss of the sense of passive position of the limbs, and if the proper method were employed this could always be elicited. But until then the patient was in the pre-ataxic stage. The important thing in locomotor ataxy was the loss of the sense of passive position. It had been shown that the long tracts of the cord he had referred to did not conduct ordinary pain, and Dr. Head could not help thinking that these long tracts were subservient in some way to the sense of passive position. He drew a comparison between the sensory outbursts represented by the crises of tabes and the motor outbursts (the convulsive seizures) in general paralysis. Turning to the anatomical changes in tabes he could not think that tabes could be due to so gross a change as a meningitis.

Dr. PURVES STEWART wished briefly to discuss three questions: (1) why was it that some syphilitic patients escaped without any affection of the nervous system whilst other syphilitic persons developed tabes or general paralysis? (2) why did some syphilitic patients develop tabes whilst others had general paralysis? and (3) why did they find tabetic lesions in the spinal cord in certain non-syphilitic cases—e.g., in pernicious anæmia? The explanation was not to be found in the intensity of the previous attack of syphilis, for the severity of tabes was in no way proportional to the previous syphilis. Slight syphilis was often followed by severe tabes, and severe syphilis might never develop tabes at all. Obviously there must be some other factor and he agreed with Edinger in thinking that very often that factor consisted in over-exertion of certain definite groups of nerve cells. Briefly stated, this theory was that tabes was the result of over-exertion of nerve paths in an individual whose system was below par, commonly from syphilis, but sometimes also from other less common causes—e.g., pernicious anæmia. Edinger and Helbing had produced lesions similar to tabes in rats by making them run in a treadmill all day long for 10 weeks or less, and in other rats which were hung up by their tails for several weeks for three or four hours daily. Other rats were rendered artificially anæmic by the subcutaneous injection of pyrodin. Dr. Purves Stewart showed some lantern slides of sections of the spinal cords of rats which had run for 72 and 52 days in treadmills. These showed marked degeneration, most intense in the posterior columns. These changes were much more marked in the anæmic rats and appeared earlier. He next referred to the fact that tabes was commonest in those who throw a strain on their equilibration.—e.g., in men who walked about a great deal. It was also commoner in men than in women, who had sedentary work. The clinical type of tabes often differed according to the occupation of the patient, and there was often a history of a strain just before developing to disease, and he referred to cases in point. He submitted that the same arguments obtained in general paralysis. This disease was also commonest in men who had lived lives attended by mental excess. In many cases the onset was preceded by some acute mental strain. Thus, physical over-exertion could precipitate tabes and mental over-exertion might precipitate general paralysis in syphilitic persons. They ought to advise syphilitic persons therefore to avoid both of these causes as a means of prevention.

Dr. ROBERT JONES had listened with great pleasure to Dr. Mott's address. There was no doubt that syphilis was a most important etiological factor in tabes and also in general paralysis, but he could not go the length of saying that if there were no syphilis there would be no tabes or general paralysis. What, he asked, did one find in syphilitic disease of the brain? Endarteritis, periarteritis (in the smaller vessels), meningeal infiltration, and gummata were the syphilitic lesions most commonly met with. But the meningitis and arteritis were usually basal, whilst the lesion in general paralysis was cortical, and it appeared to him (Dr. Jones) to be more of a vascular meningo-encephalitis, a variety of interstitial inflammation or peri-encephalitis. Again, general paralysis and tabes in association were not so very common. Out of 520 post-mortem examinations on general paralytics (409 males and 111 females) the proportion of tabetic cases in his recollection was not above 2 per cent. Moreover, general paralysis, when there was thickening and adhesions in the Rolandic and parietal areas, was much more often associated with lateral sclerosis and rigidity, with exaggerated knee-jerks, than with posterior sclerosis, and this was not a special syphilitic lesion. Many other tabetic symptoms—laryngeal crises, cochlear disturbances, gastric crises, optic and olfactory atrophy, &c.—were not common in general paralysis though they were in tabes. Again, the result of anti-syphilitic treatment did not point definitely to a virus, although this argument could not be urged as conclusive, for the incurability might be due to the degeneration initiated by a virus. 20,000 cases of syphilis were collected by Lewin and of these 1 per cent. became insane, but not one was a general paralytic. General paralysis was certainly a most varied disease and most difficult to diagnose. Everyone was acquainted with the typical form. But there was an infinite variety, and he had had cases of neurasthenia, melancholia, and many other diseases sent to the asylum by experienced observers as general paralytics. He had long been familiar with the variety of general paralysis of the insane called the tabetic, and he had long looked for some definite and constant symptons, such as the ataxic gait. Usually the knee-jerk was absent, the pupils were "pin-point" or unequal, but the gait varied; it might be spastic or paretic, &c. He would like to ask Dr. Mott for an explanation of the varying gait. He did not deny syphilis; it was a most potent and far-reaching toxin. But in his view it vitiated the blood and weakened the constitution, preparing the way for other etiological factors, such as alcohol, venery, heredity, mental overstrain, or excitement, or a combination of these, which last was apt to be overlooked.

Dr. BERTRAM ABRAHAMS concurred with the general testimony to the great importance of Dr. Mott's researches and the value of the results detailed in the introductory paper. He submitted, however, that to apply the meta- or para-syphilitic theory to every case of tabes and general paralysis, as was done, for instance, by Hirschl, was carrying it too far, at any rate in the light of our present knowledge. The authentication of one single non-syphilitic case of either of these diseases must direct attention to the elucidation of other causes. Dr. Mott had conclusively shown the necessity of the syphilitic factor in the etiology of juvenile general paralysis, but was this equally certain in the adult form of the disease, or even in tabes? Looking at the question from the most general point of view it appeared to be one mainly of vitality. Every cell in the body started in life with a certain measure of vitality and the syphilitic poison possessed the power of diminishing that vitality in the case of certain organs, particularly the central nervous system. Such shortening of cell-life as resulted might also arise from congenital or sporadic causes, as in pseudo-hypertrophic paralysis, Friedreich's disease, &c. The syphilitic factor was thus a most important one in the production of neuronic degeneration but it was not the sole one. Strain was also to be reckoned with and they had only to consider the pathology of arterial degeneration to see how great a part it might play in the local determination of syphilitic sequelæ. With regard to general paralysis there was evidence in the same direction. This disease was known to particularly attack persons of considerable mental activity, and the strain upon the association neurons no doubt rendered them especially liable to selection by the syphilitic virus. An almost experimental example was afforded by the American negroes, among whom general paralysis was practically unknown before their emancipation, since when it had become very common. Syphilis had not increased among them and the irresistible conclusion was that the appearance of general paralysis was a result of the increased nervous strain consequent upon the active entrance into the contest for existence. But strain alone might cause arterial degeneration, and so there seemed no reason why it should not lead to a loss of neuronic vitality. It might be that in cases of general paralysis in which a syphilitic history was absent excessive mental strain, often added to toxic agents such as alcohol, might be sufficient to account for the disease. What etiological factor determined the tabetic lesion to the posterior columns was at present unknown and, indeed, our cognisance of causes other than syphilitic for this disease was almost *nil*. One argument which appeared to tell in favour of the syphilitic origin of both diseases was their relative uniformity of type (apart from the intermediate or mixed forms which had already been discussed). Typical cases of both were known to arise after syphilis and it was certainly unusual, though not unknown, for various toxic agents to produce identical results upon the nervous system. If one case was syphilitic the probability would be in favour of all being so, but there was no essential reason why different pathological agents should not lead to the same effects. With regard to the relation of tabes and general paralysis little could

be added to what Sir W. Gowers had said. An etiological identity could hardly be used to connote "the same disease," and hence the question came back to the former one—namely, as to whether all cases of tabes and general paralysis were syphilitic or not. But what was abundantly shown by Dr. Mott's work was the pathological similarity of the two diseases in that each of them was primarily a neuronic degeneration and not an interstitial overgrowth. This was confirmed in the syphilitic cases by the length of time which elapsed between the specific and nervous manifestations. In the 20 years which might pass before syphilitic subjects developed tabes every trace of toxin must long since have been eliminated. What happened was that the neurons were affected at the time of the syphilis in a manner not to be detected by their present microscopical skill but revealing itself inevitably in the diminished vitality and premature death.

Dr. FLETCHER BEACH referred to the infantile form of general paralysis of the insane and said that he had had two cases under his own care. On consulting the literature of the subject he found that no less than 36 cases had been recorded in this country, making, with the two he had had under his care, 38 cases. Dr. T. S. Clouston had reported two cases of "developmental general paralysis," both of which were girls who were childlike in appearance. There was not only arrest of bodily development, but arrest of all the symptoms of puberty, since they had never menstruated and the breasts were undeveloped. The age at which the disease was first noticed was stated in 21 cases, and it was found that the greatest number (no less than 11) had occurred during the ages of 14 and 15 years. As regards the question of syphilis he found that in 20 out of 25 cases in which the histories were given there was evidence of congenital syphilis. He also referred to the question of congenital general paralysis which had recently been brought forward. Summing up, he would say that infantile general paralysis was commonly, but not universally, due to congenital syphilis, that as a rule there were no grandiose symptoms, but a steady progress towards dementia, and that the course of the disease was prolonged in the juvenile class of cases.

Dr. F. W. MOTT, in replying, expressed his satisfaction at finding in the main a general agreement with his propositions as regards the pathology and relationship of these two disorders. The view evidently most generally held was that syphilis was the preponderating factor in the production of tabes and also in general paralysis. Unfortunately one exception was, as one of the speakers remarked, fatal to a general proposition, but the inference was very obvious that they were both para-syphilitic affections. In the course of his researches he had noticed that atheroma of the aorta seemed to be very frequent in general paralysis of the insane, even in the juvenile form. He had found it even in a patient, aged 18 years, to whom he referred. In their clinical aspect the two diseases, general paralysis and tabes, had a strong resemblance, and he had elsewhere drawn attention to the similarity between the pains and crises of tabes and the epileptiform seizures of general paralysis. In mixed cases the symptoms of tabes more often preceded than followed those of general paralysis. Very rarely, though they did occur sometimes, mental symptoms preceded the tabetic manifestations. As regards the rôle of syphilis, in the discussion which had taken place, there seemed to be two opinions. Some gave to syphilis the chief place, but other observers gave to other toxins, such as lead, a possible place in the causation. He thought the strongest support given to the syphilitic view was derived from an analysis of the 22 cases of juvenile general paralysis which he had collected. In 80 per cent. of these hereditary syphilis was clearly in operation. It was a striking fact that 11 were males and 11 females, showing that where syphilis operated on both sexes alike both sexes were equally the subject of general paralysis. As regards the exemption of negroes in America he thought that the question of diagnosis was an important one and their methods now were better than they used to be. Mental and physical strain also played a part in the causation no doubt, but in his belief it was mainly syphilis which resulted in this loss of durability of certain of the systems of neurons. He felt satisfied that the two diseases were due to one and the same morbid process, though he did not mean they were the same disease clinically. As to the association of the two diseases in the same individual about 4 or 5 per cent. of genuine paralytic cases showed tabetic changes.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Exhibition of Specimens.—Cæsarean Section.—Presidential Address.

A MEETING of this section was held on Nov. 24th, Dr. A. V. MACAN, the President, being in the chair.

Dr. ALFRED SMITH exhibited Seven Fibro-myomatous Uteri removed by Retro-Peritoneal Hysterectomy. In one of them double salpingo-oöphorectomy had been performed abroad in the hope that the hæmorrhage would be arrested. When the patient came to him at St. Vincent's Hospital she was a wreck from continued loss of blood. Removal of the uterus was the only available course. The interest in the case was that the tumour, which was a small one, bled so much and that complete ablation of the ovaries had failed to arrest the hæmorrhage. The temperature and pulse were normal on the fourth day after the operation.

Dr. KIDD, commenting on Dr. Glenn's specimen of Excision of the Coccyx for Dislocation causing Severe Coccygodynia of many years' standing, said that he had had three such cases. He was led to believe by the text-books that granulation would occur after the operation and that he could not expect primary union to take place. In one of his cases union was so complete that the cicatrix could not be seen. In two of the cases the pain was completely relieved.

Dr. G. COLE-BAKER read a paper on a case of Cæsarean Section in which he performed this operation successfully in August last on a woman parturient for the eleventh time. He believed that in this respect his case was unique, though Professor Murdoch Cameron of Glasgow University had performed it on a nine-para whose eight previous pregnancies had been terminated by craniotomy. The history of the 10 previous labours in Dr. Cole-Baker's case was somewhat remarkable. The first, fourth, and fifth were terminated by forceps. At the second and tenth labours, forceps having failed, version was performed, but in both cases the after-coming head was only extracted by perforation and craniotomy. The third, sixth, seventh, eighth, and ninth labours terminated naturally. As the woman had had living children Dr. Cole-Baker allowed her to remain in labour for 40 hours before he interfered. At the end of this time, however, as the mother's pulse and temperature were rising, the lower uterine segment thinning out and the contraction ring becoming marked, he asked Dr. W. J. Smyly to see the case with him, and they mutually agreed that the choice lay between Cæsarean section and craniotomy. Dr. Cole-Baker chose the former, incised the uterus while still in the abdominal cavity, and extracted the child by the feet. The incision was through the placental site and hæmorrhage was very free for a few seconds, but was completely controlled by Dr. Smyly, who slipped both his hands down on to the cervix the moment the emptying of the uterus permitted of its being lifted out through the abdominal incision. The uterine wound, which was six inches long, was begun with a scalpel and completed with scissors, and from the time of its commencement till the child was extracted was not more than 90 seconds. The wound in the uterus was closed with interrupted silkworm gut sutures passed down to, but not including, the decidua. The patient made a good recovery, was up on the twenty-eighth day after the operation, having nursed her infant from the second day after her delivery. Later Dr. Cole-Baker measured the patient's true conjugate with Skutsch's pelvimeter and found it to be six centimetres only. It was difficult to understand how a woman with such a limited conjugate could have brought forth living children *per vias naturales* except on the assumption that she did not go to "term" on these occasions and that the children were small. The child Dr. Cole-Baker extracted was a female weighing nine pounds. He did not think the child could have been delivered alive in this case by the performance of symphysiotomy, and, even so, preferred Cæsarean section to that operation.—Dr. KIDD and the PRESIDENT discussed the case.

The PRESIDENT then read his address on the Significance of Pain in Gynæcology and the section adjourned.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 7th, Dr. J. Graham, the President, being in the chair.—Professor J. W. Byers brought before the members details of a successful Abdominal Section for Ruptured Tubal Pregnancy and showed the specimens removed. The patient, who was 29 years of age, had been married for 12 years and had no children. She was admitted into the Royal Hospital, Belfast, on Oct. 13th with a history that two weeks previously (after having missed a "period") she was seized with pain in the left side of the abdomen and difficulty in passing urine; at the same time a slight red vaginal discharge occurred. She recovered from this, but again immediately before going to the hospital she had another attack of pain followed by collapse. On admission the patient was pale, with a quick, weak pulse (120) with tenderness over the lower abdomen, specially on the left side, and with a distinct soft, baggy tumour felt on the pelvis on the left side of the uterus. On opening the abdomen a large quantity of dark-coloured blood welled out of the peritoneal cavity. The left tube was found to be enlarged and with a ruptured gestation cyst in its middle third. It was adherent in several places and was removed and ligatured in the usual way (this being done with great difficulty owing to its soft condition). At this stage of the operation the patient was profoundly collapsed and appeared to be about to die. Her eyes became glassy, the pulse at the wrists was imperceptible, and the respiration was sighing. Half-a-pint of saline solution was slowly injected under each breast, which rallied her, but her condition was so critical that the clots could not be thoroughly washed out of the abdomen and it was left full of saline solution, a glass drainage-tube was inserted, and the wound was closed. The patient remained for several hours in an extremely exhausted condition, but with saline and stimulating enemata she gradually rallied. The glass drainage-tube was removed on the next day and the patient made a good recovery. The specimen removed consisted of an enlarged pregnant left Fallopian tube which was ruptured in its middle third; closely connected with it was a small solid body of the size of a pigeon's egg, which a careful microscopic examination made by Dr. J. Lorrain Smith showed to be a tubal mole. Professor Byers said that he communicated the case because it was the most profound example of collapse which he had ever seen recover after an abdominal section. It also emphasised the value of saline sub-mammary injections (a method which in this as in other cases he had found easier and as efficacious as throwing the fluid into a vein) and it showed that a conception in a Fallopian tube though a mole might cause rupture of that organ.—Dr. A. B. Mitchell read a paper on the Surgery of Perforated Gastric Ulcer, with special reference to the results of the operation in Ulster. He discussed very fully the diagnosis and surgical treatment of this condition and gave a total of 13 cases of operations for perforated gastric ulcer performed in Ulster up to Nov. 30th, 1899. Of the 13 cases, all operated on by Belfast surgeons, there were six recoveries. Dr. Mitchell himself had operated in five cases with two recoveries. An interesting discussion followed.—Dr. W. Calwell spoke of the diagnosis of perforation and believed that the pulse-rate was an important sign.—Mr. T. Myles (Dublin) advocated a long incision and gave details of two cases which were supposed to be ruptured gastric ulcers, where a short opening of the abdomen having shown that the stomach was all right the wound was closed, and at the necropsy the surgeons who operated were surprised to find intestinal obstruction from volvulus. A long free incision would have cleared up the diagnosis and he emphasised strongly the importance of having a thorough examination of the peritoneal cavity when it was decided to do a cœliotomy.—Professor T. Sinclair also spoke of the value of the pulse-rate; he believed if it was over 140 recovery was rare. He doubted the value of lavage of the abdomen after the ulcer was closed, preferring sponging, and he was sceptical about gauze drainage. If it was necessary to drain he would rather use some form of tube.—Professor J. A. Lindsay said that only about 6 per cent. of gastric ulcers perforated, so that there was still a large field left for the physician to treat in this complication.—Professor W. Whitla spoke of a sign of perforation of a gastric ulcer mentioned to him by Sir W. Gairdner—namely, the loss of the percussion note given by a normal stomach.—Professor Byers spoke of the great change that had taken place amongst gynæcologists on the question of drainage. With improved technique and rigorous asepsis the cases of drainage became less and less. Indeed, some of the German authorities never used drainage, and he believed that in the future surgeons would give up the use of the gauze or any other kind of drain in operations for perforated gastric ulcer just in proportion as their technique improved.—Mr. A. Barker's table of 12 cases of Perforated Gastric Ulcer in which drainage was only employed in one case and was there shown to have been unnecessary[1] supported Professor Byers's views.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 8th, the President, Professor C. J. Wright, being in the chair.—Dr. A. L. Whitehead read a paper on the use of Suprarenal Extract in Nasal Surgery. Oliver and Schäfer's experimental investigations on the effects of intravenous injections of the extract were mentioned and papers by Newcomb, Bates, and Swain were referred to. A watery extract of the dried gland, in the strength of 10 grains to the drachm, with the addition of 12 grains of hydrochlorate of cocaine after filtration was recommended. The value of this extract for diagnostic purposes was pointed out, the extreme shrinkage in the vascular erectile tissue of the nose resulting after the local application facilitating examination. In operative work the advantages were stated to be threefold—firstly, the greater room afforded by reason of the ischæmia; secondly, the diminished loss of blood; and thirdly, the freedom of the field of operation from hæmorrhage. Cases of partial and complete resection of the turbinate bones and removal of polypi and septal spurs were mentioned, and it was noted that there was no severe reaction, excessive post-operative hæmorrhage, or delay in the process of repair.—Dr. James Braithwaite, Dr. D. S. Long, Mr. B. G. A. Moynihan, Dr. A. G. Barrs, and the President discussed the paper, and Dr. Whitehead replied.—Mr. B. G. A. Moynihan read a paper upon three cases of Hernia of the Bladder. The first case occurred in a man, aged 77 years, who had suffered for eight years from a partially reducible right inguinal hernia and for 12 months from marked symptoms of prostatic enlargement. In the morning of the day of operation the hernia became quite irreducible and symptoms of strangulation developed. On opening the sac seven inches of large intestine were exposed and readily reduced. Behind and to the inner side of the sac lay the bladder thickly covered with fat and containing about 10 ounces of urine. The sac was removed up to the bladder and stitched up with a continuous suture. The bladder was freed and reduced and the canal was stitched up. Two later cases were recognised by the examination of an adipose deposit on the inner side of the neck of the sac. On gently tearing through this fat the bladder was exposed. The paper was illustrated by lantern slides.—Mr. Lawford Knaggs referred briefly to a similar case which he had seen.—Dr. A. G. Barrs read notes of a case of Rheumatic Dermatomyositis occurring in a child and referred to reported cases of this affection.—Dr. Basil Hall (Bradford) read notes of a case of Syphilitic Fibro-spongioid Ostitis, illustrating his remarks by skiagrams and photographs.—The following cases, specimens, &c., were exhibited:—Mr. Mayo Robson: (1) A Large Fibro-cystic Uterine Tumour removed by Abdominal Hysterectomy; (2) a large Thyroid Tumour removed by operation (the smaller part of it lay beneath the clavicle and first rib and was shelled out); (3) Two large Gall-stones removed by Cholecystotomy (both stones were palpable through the abdominal wall on a level with the umbilicus; Riedel's lobe was present in both cases); (4) Fibro-Myxo-sarcoma of the Parotid Gland; (5) a specimen from a case of Gangrenous Intussusception in a child; and (6) a large Thyroid Tumour showing Calcification.—Dr. Wardrop Griffith: (1) Urine from a case of Paroxysmal Hæmoglobinuria; (2) Pancreas and Kidneys from a case of Diabetes (Dr. A. G. Barrs' patient); (3) a case of Congenital Syphilis showing Great Periosteal Thickening of the Humerus; and (4) a case of Paralysis of the Third Cranial Nerve.—Dr. F. W. Eurich (Bradford): Uterus at the Fourth Month with Fœtus, &c., *in situ*, showing a Placenta Prævia.—Dr. Basil Hall (Bradford): A New Intestinal Needle.—Dr. A. G. Barrs: A case of Pulmonary Arthropathy with Hepatic Growth.—Mr. B. G. A. Moynihan: (1) An Enlarged Thyroid Gland, with Hæmorrhage into its Substance; and (2) Stone Removed from the Common Bile Duct weighing 10 grains.—Dr. A. Mantle (Halifax): (1) Photographs of cases of Alcoholic Neuritis; and (2) Viscera showing Gaseous Distension probably due to the bacillus ærogenes.—Dr. A. L. Whitehead: Large Septal Spur removed by Bosworth's operation.—

[1] THE LANCET, Dec. 16th, 1899.

Mr. P. C. Cammidge: (1) Specimen of Tuberculous Bronchopneumonia; and (2) Microscope Specimens of Pericardial Exudation showing Pneumococci.—Mr. H. Littlewood: (1) Specimen of Myeloid Sarcoma of the Lower End of the Femur with Skiagram; and (2) Microscopic Sections from Two Branchial Cysts.—Dr. E. F. Trevelyan: (1) A Lung showing Cavities (prepared by Kaiserling's method); (2) Laryngeal Polypus; and (3) Photographs of a case of Deformity due to very Old Caries of the Cervical Spine.—Mr. Lawford Knaggs: (1) Primary Amputation through both Thighs; and (2) Solid Ovarian Tumour—also a Grape Stone removed from the Peritoneum at the operation.—Dr. T. Churton: (1) A case showing Baginsky's Toe Phenomenon; and (2) a case of Favus.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 6th, Professor W. J. Sinclair, the President, being in the chair.—Dr. W. Milligan described a case of Cerebellar Abscess Secondary to Acute Suppurative Middle Ear Disease. The patient, a male, aged 42 years, contracted a severe cold in the head which was followed very shortly afterwards by pain in the right ear and by a discharge which lasted for a few days. Ten days later pain in the head, mainly occipital, came on, accompanied by attacks of vertigo. Examination of the ear at this time revealed a swollen and congested membrane but without any perforation, complete deafness upon the affected side, a normal temperature, and a pulse-rate of 72. A few days later severe head symptoms supervened. Severe pain in the head, again mainly occipital, was accompanied by marked insomnia. On two or three occasions the patient had been sick. The pulse was 62 and the temperature was 97·8° F. There was no optic neuritis or paralysis of any ocular muscles. On the following day the patient was admitted into hospital. The membrana tympani was found to be congested and swollen in its posterior segment, but it was not perforated. Deafness upon the affected, the right, side was practically complete. Deep-seated pain could be elicited by pressure over the mastoid process. The temperature was 97·8°, the pulse was 60, and the respirations were 15 per minute. The tongue was thickly coated with fur, the breath was extremely foul, the bowels were markedly constipated, and the anterior abdominal wall was retracted. No optic neuritis, hemianopsia, or paralysis of any of the ocular muscles was present. Vertigo was complained of and when walking a marked tendency existed to fall forwards and to the right side. Pain of an intense character was complained of when pressure was made over the right cerebellar region. Cerebration was somewhat sluggish, but during the night the patient was excited and incoherent. Arrangements were accordingly made for operation. The mastoid process was first of all opened up very freely, nearly the whole of its cellular structure being gouged away. The merest trace of pus was found in one of the more posterior cells, but the mucosa lining the cells was deeply congested. At this stage of the operation the patient suddenly ceased breathing, the pulse, however, continuing good and regular. The opening of the cerebellum had consequently to be performed whilst artificial respiration was being kept up. As quickly as possible a disc of bone was removed and a grooved director was introduced into the cerebellum downwards and forwards. Pus (from one to two ounces) was at once found and was rapidly evacuated. A drainage-tube was slipped into the abscess cavity which was washed out with a 1 in 40 warm carbolic lotion. The patient made a good but somewhat slow recovery.—Dr. E. S. Reynolds related the symptoms of a case of Cerebellar Tumour affecting the Middle Lobe (with staggering gait, dysarthria, and occasional vomiting) which was operated upon by Mr. Thorburn. It was afterwards found to be a soft myxoglioma.—Mr. W. Thorburn discussed the diagnosis of the case and he showed that all conditions except cysts and tumours could be excluded, but that either a cyst or a tumour would cause the symptoms. Operation was decided upon in the hope that a remediable condition might be discovered. It was carried out in two stages but the second operation revealed no growth within an operable area. The symptoms were slightly, but only temporarily, relieved. On the general question of operation for cerebellar tumour Mr. Thorburn maintained that in spite of the small success hitherto attained the hopelessness of the disease rendered exploration imperative and that such exploration would be likely to relieve rather than to aggravate symptoms by reducing tension, as in the present case.—Mr. G. A. Wright mentioned (1) a case of Rupture of the Jejunum in which the symptoms and history rather suggested rupture of the bladder (the patient had received a kick in the hypogastrium and lived 45 hours); and (2) a case of Small Ovarian Tumour in a girl, aged 18 years, in which torsion of the pedicle gave rise to symptoms simulating appendicitis. The patients were under the care of Dr. Edgar Helme and Dr. B. J. Massiah respectively.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of the Pathological and Microscopical Section of this institution was held on Dec. 14th, Mr. F. T. Paul being in the chair.—The following specimens were exhibited:—Dr. Nathan Raw: (1) Ulcerative Endocarditis associated with Embolism of the Femoral Arteries, causing Gangrene; (2) Cancer of the Head of the Pancreas with greatly Distended Gall-bladder; (3) Uric Acid Calculus in the Kidney; and (4) Tuberculous Ulceration of the Intestines with Perforation, causing General Peritonitis.—Dr. R. C. Dun: A post-mortem specimen of Intussusception.—Mr. G. S. Stansfield: Double Aneurysm of the Arch of the Aorta ruptured into the Œsophagus, from a man aged 46 years.—Dr. T. R. Bradshaw and Dr. W. B. Warrington communicated a paper on the Association of Albumosuria with Bone Disease. They pointed out that the peculiar body known as "Bence Jones albumose" had been recognised in eleven undoubted cases, and that all the recent cases tended to confirm the view that albumosuria was always an indication of multiple myeloma. They considered that it was still undecided whether multiple myeloma ever occurred without albumosuria. Dr. Bradshaw demonstrated the distinctive characters of the urine in his case, and numerous microscopic and other specimens were shown.—The paper was discussed by Mr. Paul, Mr. Thelwall Thomas, and Dr. J. R. Logan.—Dr. R. J. M. Buchanan read a paper on the Etiology of Cancer, with special reference to the parasitic theory. He briefly reviewed the older theories and dealt with the gradually accumulating evidence of infection, mentioning the morphological and experimental work done at home and abroad. He then described the results of his personal investigations which had extended over a period of more than six years. He described the parasite and what he considered to be its life-history as far as made out. In the examination of many hundreds of tumours he had never found it except in carcinoma (up to the present he had purposely omitted sarcoma). He carefully described his methods and stains, and illustrated his paper by numerous microscopic specimens and by photographic and hand-drawn lantern transparencies.—A discussion took place in which Sir William Banks, Mr. Paul, Dr. C. J. Macalister, Dr. F. Imlach, Mr. F. C. Larkin, and Mr. George G. Hamilton took part.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Dec. 11th, the President, Dr. Thomas Barr, being in the chair.—Dr. T. Spence Meighan showed the following cases:—1. A girl who had suffered from Extreme Divergence of Both Eyes due to Congenital Absence of the Internal Recti. At a distance of five feet there had been a blind space measuring three feet transversely. He had operated on the patient with the result that the visual fields were now in contact but did not overlap. There was neither binocular vision nor diplopia. 2. A child the subject of a very large Coloboma of the Left Upper Eyelid, associated with Dermoid Cyst of the Cornea and with Supernumerary Auricles on the same side.—Dr. David Newman gave an account of two cases in which small Renal Calculi were removed from the ureter by operation through the bladder. The calculi had become impacted in the vesical extremity of the duct and had projected into the bladder, covered by mucous membrane. He also showed Casper's Instrument for Catheterisation of the Ureters.—Dr. G. Burnside Buchanan showed a Large Sarcoma of the Internal Popliteal Nerve removed from a patient who had motion and sensation below the knee, with the exception of some anæsthesia on the outer side of the sole of the foot. Microscopic specimens by Dr. A. R Ferguson showed the tumour to be of the round-celled variety.—Dr. Buchanan also showed a Large Urinary Calculus which had been impacted in the prostatic portion of the urethra and had been removed by perineal section.—The following card specimens were exhibited:—Dr. G. Burnside Buchanan: Pedunculated Osteo-chondroma from the Lower End of the Femoral Shaft.—Dr. G. H. Edington and Dr. A. R. Ferguson: Two Specimens of Fused Kidneys.—Dr. James F. Gemmill: Drawing of Fused Kidney in a Human Embryo of 10 weeks, reconstructed from serial sections.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The third meeting of the session was held in the Medical Library

of University College, Bristol, on Dec. 13th, the President, Mr. W. H. Harsant, being in the chair.—Mr. G. Munro Smith showed a patient with marked Deformity of the Legs and a patient with Syphilitic Disease of the Elbow.—Mr. Paul Bush showed a patient with Phosphorus Necrosis and a patient with Actinomycosis.—The President, Dr. J. O. Symes, and Mr. W. R. Williams spoke on the conditions.—Mr. G. Munro Smith read a paper on a case of Anthrax.—Mr. C. A. Morton, Dr. T. Fisher, Mr. Paul Bush, Dr. L. Firth, and Mr. W. R. Williams discussed the paper.—Mr. T. Carwardine showed the following specimens: (1) Cyst of the Vermiform Appendix, and (2) Extra-uterine Gestation.—Dr. A. E. Aust Lawrence, Mr. W. R. Williams, and Mr. C. A. Morton commented on the specimens.—Dr. J. O. Symes read a paper on Non-bacillary Croup.—Dr. T. Fisher and the President spoke on the question.—The following lantern slides were shown by aid of the oxy-hydrogen light:—Mr. G. Munro Smith: Syphilitic Disease of the Elbow; Syphilitic Ulcer of the Leg; slides illustrating his paper on Anthrax.—Mr. Paul Bush: Syphilitic Disease of the Humerus and Tibia and several slides illustrating his case of Actinomycosis.—Dr. J. O. Symes: Slides in connexion with his paper on Croup.—Dr. B. M. H. Rogers read notes on a case of Sarcoma of the Heart and showed the specimen.—Mr. W. R. Williams, Dr. T. Fisher, and Dr. P. W. Williams discussed the paper.—Mr. C. A. Morton read a paper on a Successful Cœliotomy for Intestinal Obstruction due to Persistent Meckel's Diverticulum.—Dr. J. Swain, Mr. Paul Bush, Mr. W. R. Williams, and the President spoke on the subject.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Dec. 15th, the President, Mr. A. W. Galloway, being in the chair.—Mr. W. Campbell M'Donnell read a paper on the Advisability of Licensing and Registering Midwives. In it he said that though the proposal to educate and examine midwives was made in this country in 1547 it was even now a proposal only. The reform was urgently needed, as shown by the facts that the estimated number of women practising as midwives in England and Wales was from 10,000 to 15,000, of whom only 10 per cent. or less had been trained, though they attended from 50 to 75 per cent. of the labours of England and Wales; and that since 1847 the mortality from puerperal fever had increased from 0·16 to 0·25 per cent. The mortality due to puerperal fever in cases attended by trained midwives was 0·16 per cent. and the untrained midwives 0·48 per cent. This difference meant an annual total of 3000 lives that probably might have been saved by the adoption of educated cleanliness. This was the essential point, for the mortality from accidents of childbed had been reduced since 1847 by more than 33 per cent.—A general discussion followed. At its close the President took the opinion of members present as to the advisability of licensing and registering midwives. The vote was unanimously in favour of the licensing and registering of midwives.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on Dec. 1st.—The consideration of a letter relating to midwives was deferred.—The members generally agreed to attend the wives and families of Reservists now at the war free of charge.—Mr. W. W. Linington read a paper on a Few Points in Surgery. He dealt first with the question of anæsthetics and considered that chloroform should only be used when ether was contra-indicated. The good results of chloroform in India were due to the hot climate making evaporation free and lessening the chance of an overdose. The cyanosis and vomiting liable to occur in ether anæsthesia were in inverse proportion to the experience of the administrator. He preferred the method of giving nitrous oxide with air rather than with oxygen, as it was practically the same thing and much less expensive. Gas followed by ether was the ideal anæsthetic. Dealing next with shock he advised a preliminary nutrient and stimulating enema and a hypodermic injection of strychnine in severe operation cases, also keeping the patient warm. Intravenous transfusion was of little use although it might keep the patient alive for a short time. Rectal injections were of more use. With regard to antiseptics, he doubted the wisdom of aseptic surgery in general practice and advocated antiseptic methods.—An interesting discussion followed.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM. At a meeting of the above society held on Dec. 18th the following gentlemen were elected officers for the first session:—President: Sir William Dalby. Vice-Presidents: Dr. Urban Pritchard, Dr. Thomas Barr, and Mr. George Field. Treasurer: Mr. A. E. Cumberbatch. Librarian: Dr. E. Cresswell Baber. Secretaries: Mr. Charles A. Ballance and Mr. Arthur H. Cheatle. Council: Mr. Victor Horsley, Mr. T. Mark Hovell, Dr. Edward Law, Dr. P. McBride, Dr. William Milligan, and Dr. A. W. Sandford. The meetings will take place at the Medical Society's Rooms, Chandos-street, on the first Monday in the months of February, March, and May at 4.30 P.M.

ERRATUM.—Dr. William Ewart points out that in the report of his remarks at the Medical Society of London as given in THE LANCET of Dec. 16th, p. 1668, he is made to allude to the solution of iodine used for irrigation as "strong," whereas a *weak* solution was employed.

Reviews and Notices of Books.

Hermann von Helmholtz. By JOHN G. MCKENDRICK, LL.D., F.R.C.P. Edin., Professor of Physiology in the University of Glasgow. London: T. Fisher Unwin. 1899. Pp. 288. Price 3*s.* 6*d.*

THIS volume is one of the well-known series—Masters of Medicine—published by Mr. T. Fisher Unwin.

Hermann von Helmholtz was born on August 31st, 1821, at Potsdam. He was the son of Ferdinand Helmholtz, a teacher of philology and philosophy in the Gymnasium. In the little sketch that he gave of his early life in a speech delivered in 1891 he tells us that he had no head for languages or dates of history, while anything involving the reasoning powers was learnt with ease. In his eighth year, as Professor McKendrick tells us, he astonished his teachers by his knowledge of many fundamental truths of geometrical laws. His mathematical powers were not, however, trained by any eminent teacher, so that he owed to his own private development of them his great achievements in that line. It was his desire to devote his life to the study of physics, but on the recommendation of his father, who had only limited means, he became an army surgeon. He graduated in medicine in 1842 at Berlin and in 1843 he made an important contribution to the theory of fermentation. The old theory regarded the action of the yeast as catalytic—"that is, causing a decomposition of the atoms forming the sugar in a way similar to the action of platinum-black on peroxide of hydrogen when the latter gives up an atom of *hydrogen*." Surely oxygen is meant. Helmholtz placed a bladder full of boiled grape-juice in a vat of fermenting juice and found that the fluid in the bladder did not ferment. The fermentation was not, therefore, caused by a soluble substance formed by the yeast cells, as held by Liebig, which could pass through the walls of the bladder. Soon afterwards it was conclusively proved that the yeast cells themselves were the cause of fermentation. From 1844 to 1848 the subject of animal heat occupied much of his attention, while in what he terms his "idle moments" he read the works of Euler, D. Bernouilli, D'Alembert, and other mathematicians of the eighteenth century. In 1847 he read his famous paper on the Conservation of Force, or energy, as it is now called. The author showed himself at one stroke to be a mathematician of the first order and conclusively proved by mathematical reasoning what others were only suggesting from the results of their experiments. It will be seen that the doctrine of conservation of energy was of the highest importance in physiology. It met with much opposition at first from mathematicians, physicists, and physiologists; these last thought it fatal to the vitalistic theory which then was paramount. The value of the work was, however, soon recognised by the military authorities and he was relieved

largely from his military duties and encouraged to go on with purely scientific work.

In 1849 he was appointed to the chair of Physiology and Pathology at Königsberg which he held until 1856. It was during this period that he contributed most of his physiological work. In 1850 he measured the rate of a nervous impulse and in the following year he invented the ophthalmoscope. His attention was now chiefly drawn to the study of physiological optics. By means of his ophthalmometer he determined the radii of curvature of the cornea and of the two surfaces of the lens, and other constants of the eye. He promulgated the theory of accommodation which until the last few years has been universally held. Professor McKendrick says that all other theories have been entirely abandoned. This is incorrect, for within the last few years Tscherning has shown that during accommodation the lens has a shape that cannot be accounted for by this theory. While the central part of the lens is more convex the peripheral part behind the iris is very much flattened. Such a change would be brought about by an increase of tension of the suspensory ligament, which would cause the central part in front of the more solid nucleus to become more curved. Helmholtz was misled by the erroneous measurements of the curvature of the lens in dead eyes made by J. L. Petit with very faulty methods. These values were admitted by everyone in Helmholtz's time.

From 1852 to 1856 the subject of colour engaged his attention. He showed the essential difference between mixing coloured lights and mixing coloured pigments, and he developed the theory of three primary colour-sensations which is known as the Young-Helmholtz theory.

In 1856 he was appointed to be Professor of Physiology at Bonn. Here he worked at Physiological Acoustics, and important papers from his pen appeared on Combination Tones, Vowel Tones, and several on the scientific basis of music. One on Musical Temperament is owing to a misprint misnamed in the book Musical Temperature. To him we owe all our knowledge of the physiological mechanism of the ear. In 1859 he removed to Heidelberg, where he was much occupied with the movements of the eyeballs, stereoscopic vision, and the very difficult subject of the horopter.

In 1871 he was appointed to the chair of Physics at Berlin. From this time until his death in 1894 he contributed a series of mathematical and physical papers of the most abstruse nature. It would require the abilities of a mathematician and physicist of the very highest order to justly appreciate his work on vortex motion, electromagnetic action and the ether; these subjects are, however, foreign to the immediate interests of the medical profession. There is a general consensus of opinion that in mental power and width of range he is one of the greatest men of the present century. He may be regarded as the founder of scientific physiology and medicine; no other has applied his knowledge of physics to the conditions of the living body with such conspicuous success. Those who can appreciate his astounding work in the departments of physiology, physics, and mathematics—as all students of science are compelled to do when their range of reading becomes extended—will be able to judge of the difficulty of the task undertaken by Professor McKendrick when he set himself to write a brief life of such a man. It is with pleasure that we congratulate the author on the way in which he has dealt with his subject.

Dairy Chemistry: A Practical Handbook for Dairy Chemists and Others having Control of Dairies. By HENRY DROOP RICHMOND, F.I.C. London: Charles Griffin and Co., Limited. 1899. Pp. 384. Price 16s.

MR. DROOP RICHMOND possesses abundant opportunities for the practical study of milk and milk products. His work is associated with the business of the Aylesbury Dairy Company to which he is the analyst. He is a prolific writer on subjects connected with the analysis and composition of milk and has brought very many valuable papers to the attention of the Society of Public Analysts. His opinions are listened to as those coming from a leading authority, and so wide has been his experience in his daily professional duties that we wonder that he has not before published the products of this experience in the concrete form of the present volume. Broadly, the work is divided into three sections. The first describes the chemical properties of the constituents of milk, the second directs how to make use of these properties in the practical analysis of the various milks and milk products, and the third section shows how analytical methods may be applied to the control of dairy operations. The author has treated his subject from all points of view with a completeness which bespeaks his sound knowledge. He even discourses upon the theoretical considerations, such as the presence of an asymmetric carbon atom in the molecule. Indeed, the chapter in which this occurs is quite mathematical and contains constitutional formulæ of sugars, lactic acid, &c. Other chapters, as that on the fatty acids, are written much in the style of a textbook on organic chemistry. But the work also is of an eminently practical character and in our opinion this is its most valuable feature. The author recounts all the processes worth anything at all which have been used from time to time for the assay of milk. His own experiences of the merit of these analytical processes are accordingly given and he is obviously in the position of being able to recommend the best and most accurate analytical method in accordance with his large experience. The average composition of milk given in the third chapter is based on 200,000 analyses. Mr. Richmond joins issue with Professor Halliburton on his adoption of the word caseinogen, pointing out that the termination "ogen" from the Greek root means to beget, a meaning which is preserved in the words oxygen, hydrogen, and chromogen. But Mr. Richmond maintains that in "fibrinogen" and "caseinogen" this meaning is not preserved; the termination indicates that these bodies are substances which are split up into fibrin and casein with other substances. He supports this attitude by describing the exact nature of enzymic action on casein. On page 140 Mr. Richmond refers to THE LANCET Special Sanitary Commission on the Use of Antiseptics in Food[1] and summarises the evidence there given by what he calls "a selection of scientists who may claim to be authorities on physiology." Although Mr. Richmond, perhaps, may not share this claim, yet his views on the question of preservatives are worth considering chiefly from his point of view, that of a dairy analyst who is responsible for the distribution of large supplies of milk in sound condition and of good quality. "It seems," he says, "that while healthy adults can take small doses of the preservatives usually employed in milk there is evidence that young children are not unaffected; the practice must therefore be considered undesirable." Again, "the author's experience has shown that in London the use of preservatives in milk is entirely unnecessary; no difficulty has been found even in summer in delivering milk to customers in a fresh condition." His views in regard to the preservation of cream and butter are peculiar, for these foods, he holds, are consumed in comparatively small quantities, and being, moreover, high in price, they may be considered as luxuries and are expected to keep for a longer time than is naturally possible. "It is readily seen that under these circumstances there is far more to be said in favour of the use of preservatives in cream and butter than can be said when

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[1] THE LANCET, Jan. 2nd, 1897.

they are added to milk." He concludes "that the advantages of using preservatives to the vendor are obvious; they enable a perishable article to be maintained in a marketable condition for a longer time than it would otherwise remain so." As change, he adds, from the action of micro-organisms is not entirely stopped the advantage to the purchaser is by no means so apparent and there appears to be a well-founded public opinion against the use of preservatives. He makes no suggestion as to how the question can be met by legislation. Specially prepared milks, such as artificial human milk, peptonised milk, and diabetic milk, are described in the last chapter. In our opinion this book is the best contribution on the subject that has yet appeared in the English language. It is manifestly reliable and confidence will be placed in this record of a peculiarly large experience of the subject by public analysts, medical officers, dairy farmers, and others who require a knowledge of milk and milk products and of the processes best and most accurately adapted for their analyses.

Bartholomew's Physical Atlas. Volume III.: Atlas of Meteorology. A Series of over 400 Maps. Prepared by J. G. BARTHOLOMEW, F.R.S.E., and A. J. HERBERTSON, Ph.D., and edited by ALEXANDER BUCHAN, LL.D., F.R.S. Prepared at the Edinburgh Geographical Institute and published by Archibald Constable and Co., Westminster. 1899. Price £2 12*s.* 6*d.* nett.

THE staff of well-known authorities who are responsible for the publishing, revision, and editing of this colossal contribution upon the natural phenomena of the earth have made an admirable start, and if the entire series of maps which are to follow attain the same high pitch of excellence and level of beauty of the present number the whole will undoubtedly form the finest example extant of the art of recording scientific observations. Bartholomew's great Physical Atlas will be published in seven volumes, the subjects dealt with being respectively geology, orography, hydrography and oceanography, meteorology, botany, zoology, ethnography and demography, and general cosmography and terrestrial magnetism. The publication has been commenced with Vol. III., the Atlas of Meteorology, in view, as the editor states, of the present position of meteorological research being specially opportune for the appearance of such a work. At the outset it had been intended to begin publication with Vol. I., the Atlas of Geology, but the number of important geological surveys in progress made it desirable to delay this section until the data were more complete. The order of publication in the other volumes of the atlas will similarly be determined by the completeness and accessibility of reliable material, enabling the editors, as Mr. Bartholomew says, to make each volume fully representative of the latest research. No one can find fault with such an arrangement. The atlas before us dealing with Meteorology, containing over 400 maps, was promised in autumn last and the promise was kept, for we received the present advance copy at the end of August with the request that it should not be reviewed until the date of publication, which was later.

It is not possible in the space at our disposal to accord to this very beautiful atlas the lengthened notice to which it is entitled. We must be content briefly to review a few of its many and salient features, all of which will excite the admiration of those interested in this subject. And who with any pretensions to even a smattering of knowledge of science in general can afford to ignore this subject or would belittle its importance? In medical circles at any rate its importance will not be underrated, for meteorology embraces climatology. Medical men may justly be regarded as the founders of climatology for they were the first to take the thermometer to all parts of the world for the purpose of recording temperatures and thus originating a basis of comparative climatology. The foundation of the science of meteorology may be traced to the discovery of the barometer in the seventeenth century by Torricelli. Later Fahrenheit introduced an instrument for the measurement of temperature, while the use of the rain gauge dates as far back as the time of Leonardo da Vinci. With these three useful instruments the pursuit of meteorological research was begun on sound principles and a new science was established. The enormous number of observations that have since been accumulated, having been drawn from all parts of the world, by a busy band of observers is a tribute to their zeal as it is a monumental piece of work which has led to the satisfactory progress of the science. After all there is no greater factor in the affairs of the world than weather; it concerns our health, our trade, and our prosperity, and it is somewhat remarkable that the conditions which determine weather have not hitherto received that attention which this important aspect of the subject demanded. There are even those amongst us who would relegate meteorology to a position outside the confines of a true science because it is held that with increasing knowledge of meteorological facts we are still unable to predict weather with any degree of certainty more than 24 hours ahead. While it is true that it is difficult in the main to be able to lay down with certitude the kind of weather that we may expect more than 24 hours in advance, yet it is this very fact which illustrates how energetic and unflagging the work of observation should be in order to bring more data to hand upon which prediction may be more accurately based. In a word, meteorology needs a thorough equipment if the science is to possess any practical application. As it is, the present equipment is a matter which must command universal admiration, judging from the enormous number of facts and statistics recorded in this atlas. With the facilities which are being added day by day to transmit speedily the prevailing conditions of weather in all parts of the globe there can be little doubt that even the stigma so often and ignorantly hurled at meteorologists of their inability to predict weather more than 24 hours in advance will be removed. Local observations help but little in this direction; they must be extended to paths remote from the centre where prediction is required.

The maps are faithfully drawn and beautifully coloured while the lines of observation may be easily followed. Thus the world is wrapped in a series of lines, recording the variations in intensity of wind, rainfall, duration of sunshine, temperature, pressure, cloud, and so on. The lines on the maps drawn through places with equal atmospheric pressure are known as isobars, those drawn between places where the same amount of bright sunshine is registered, as isohels, those drawn between places having the same amount of rainfall as isohyets, those drawn between places having the same amount of cloudiness as isonephs, and those drawn between places having the same temperature as isotherms. With a series of maps thus scored out for different parts of the world and at different times and seasons there is a wealth of material upon which to make exact observations. Some order and system are thus established and this is the substructure of meteorology. In climate maps we find the averages of temperature pressure, clouds, sunshine, and rainfall; in weather maps we alight upon indications of storm tracks and frequency, while other weather anomalies are brought into prominence. Thus light may be thrown upon the formation of dangerous anomalies and could the premonitory symptoms be known early enough warning might be issued. Space precludes us from detailing the great number of specifically interesting observations thus recorded, including the records which refer to the British Isles. Those who run should read. The text further contains a section on definitions and symbols, giving the signals and terms employed in the international meteorological code. The appendices contain an index of the meteorological services

throughout the world and their equipment, a general bibliography on the subject, a glossary of meteorological terms, and a series of meteorological tables dealing with thermal and barometric scales, calculations of rainfall, reduction of barometer to sea level, and tables for the conversion of scales.

This work is entitled to the greatest praise; it is splendidly got up and full of observations of never-failing interest. It is a work of great national importance and there are few works like it which record so faithfully, so pictorially well and so completely the physical phenomena of the earth. It is dedicated to Her Majesty the Queen, and the Council of the Royal Geographical Society, we are glad to learn, has taken special interest in the preparation of the physical atlas, having given permission for the work to be issued under its patronage. This fact, the editors acknowledge, has afforded an additional stimulus to them and to their collaborators to leave no stone unturned to make the work the most complete summary hitherto attempted of graphic representations of the facts of meteorological science. The list of editors for the whole series comprises all the well-known leading authorities on the subjects severally treated. It is pretty safe to assert that this attractive volume can never get dusty on the shelf since it is bound to be in constant requisition, while reference to its pages will always be a source of pleasure and profit.

A Record of Indian Fevers with some Hints on their Etiology, Diagnosis, and Treatment. By Major D. B. SPENCER, Indian Medical Service (Bengal). With 16 charts. Calcutta: Thacker, Spink, and Co. London: W. Thacker and Co. 1899.

THE nature of this small work is sufficiently indicated in its title. Major Spencer, I.M.S., tells us in an introduction that he has paid special attention to the subject of Indian fevers and that he has collected a large number of fever charts from his hospital and private practice. These serve as a basis for recording his experience generally of the subject and the selected charts show types of temperature and serve to act as guides for the diagnosis and differentiation of the forms of fever met with in Indian practice. The author enters into an explanation of his views of the etiology of what he designates as "tropical fever," which he considers as one of the unclassified fevers of India, clinically resembling, but nevertheless distinct from, either malarial or true enteric fever.

The author defines tropical fever as one of continued type with an average duration of a week, which may be attended with internal complications during its course, but is neither contagious nor infectious and as caused by blood-poisoning from the absorption of morbid products generated in the intestinal canal in the way and under the circumstances which he then proceeds to detail. Briefly stated, the initial stage is usually attributable to a checked function of the skin from chill or from exposure to the sun followed by a disordered action of the liver and fermentative or putrefactive changes in the contents of the intestinal canal, with the consequent manufacture, as it were, of ptomaines and other deleterious products which find their way into and poison the system. By way of familiar illustration we may say that just as an obstructed drain may give rise to the presence of deleterious gases and poisonous products in a house, so an ineffective and perverted system of drainage or checked eliminative function in the human economy may set up disease in the affected individual. As a general statement this is no doubt quite correct and many have had recourse to it as a possible or probable explanation of the autogenetic manufacture of the disease-cause in some forms of fever met with among Europeans in the tropics; but what, scientifically speaking, we require to know is something more definite and specific in regard to the exact chemical nature of the pyrogenetic products generated in such cases. The little book under notice being founded upon much clinical observation and experience is certainly worth reading and it contains some practical hints regarding the therapeutical treatment of fevers of hot climates.

LIBRARY TABLE.

A Loyal Little Maid. By SARAH TYTLER. London: Blackie and Son. 1899. Pp. 240. Price 2*s.* 6*d.*—Miss Sarah Tytler is the writer of several readable stories and her heroes and heroines are thoroughly human and not too good. The story is founded on a romantic episode of Mar's Rebellion. Little Peggy, a child of 12 years, becomes at that early age the mainstay of her family. Her father, Sir Simon, is obliged to hide from the king's officers and the heroic child prefers to undergo suffering and privation rather than betray his secret hiding-place to the Government officials. In consequence they carry her off a prisoner to Edinburgh and she is lodged in the Tolbooth, where she finds a boy champion, whom in future years she rescues in Paris from the *lettre de cachet* which would bury him in the Bastille. In the end the little heroine marries and all finishes satisfactorily. The book is attractively illustrated and young people will read it with pleasure.

The Little Panjandrum's Dodo. By G. E. FARROW. Illustrated by ALLAN WRIGHT. London: Sheffington and Son. 1899. Pp. 210. Price 5*s.*—Books by the author of the "Wullypug of Why," "The Missing Prince," &c., are always amongst the most welcome presents to our little folk in the nursery and our young friends at large. Whether they are most fascinated by the author's pretty letter to his little readers, full of humour and gentle flatteries, or whether it is the wonderful plot or tremendously long names and words which excite their continued interest in the thrilling story, has always been a mystery to us. However, the result has inevitably been the same amongst the little readers, for they, like Oliver Twist, have invariably called for "more," and the "Little Panjandrum's Dodo" promises to become as great a favourite as its predecessors. The illustrations are clever and original.

New Inventions.

THE EMPRESS PUNCTURE-PROOF BANDS.

IT is undoubted that many medical men, especially, of course, those who are practising in the country, are relying more and more upon the bicycle for their journeys. Where the country is fairly flat and the roads are good visits of emergency, especially at night, may be made on a bicycle so much more readily. There is no groom to rouse, no carriage to prepare, no horse to put in, and what a saving of time this means in responding to a night call only those who have had the double experience know. But it is necessary that the medical man should be protected as absolutely as possible from the awkward accident of puncture, for his work is not of the sort that will bear postponement. Therefore we have pleasure in recommending to him a little invention that has been recently brought to our notice under the title of the Empress Puncture-Proof Bands. These are flat, flexible strips of material padded with a substance which makes them impermeable to puncture. They are constructed to go between the case and the inner tube of a pneumatic tyre, in which position they detract almost nothing from the pace of the machine and ensure absolute safety from puncture. The price of these bands is 7*s.* 6*d.* each and they may be obtained from the Empress Puncture-Proof Bands Co., Limited, 96, Hammersmith-road, W.

We recommend these bands from personal experience of

them. They really do what they pretend to do—that is, they annul the chances of puncture, they are easy to adjust, and the very slight impediment which they cause to the working of the machine could only be detected by a combined study of the watch and the cyclometer.

THE RASTON BED-REST AND PILLOW SUPPORT.

MESSRS. CARTER, of 6A, New Cavendish-street, have placed upon the market a new form of bed-rest called the "Raston," in which by the adoption of a very simple little innovation these necessary supports to the invalid gain immensely in comfort. The old form of bed-rest (Fig. 1)

FIG. 1.

is invariably made with a solid wooden frame both top and bottom. These rigid frames are in some cases a source of serious trouble to the patient, pressing hardly day after day upon the same spots and often causing considerable pain. In the "Raston" bed-rest (Fig. 2) the hard wooden rails are

FIG. 2.

dispensed with, and the side frames are kept apart by two light crankled iron bars, thus allowing the material with which the bed-rest is covered to be stretched from side to side, so as

FIG. 3.

to form a yielding or elastic support to the patient. Messrs. Carter also make a wire-woven pillow support on the same principle (Fig. 3). Here it will be seen a woven wire mesh is suspended across the wooden side frames, and on this resilient surface the pillow can be fastened by tabs.

FIG. 4.

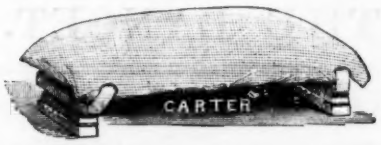

Fig. 4 shows the pillow on the support lowered to a horizontal position for sleeping.

ASYLUM REPORTS.

London County Asylum, Hanwell (Annual Report for 1898).—The population of this asylum consisted of 2415 patients, of whom 888 were men and 1527 were women. The year 1898 may be described as a "most notable one in the history of this asylum, so great and important were some of the events that have occurred therein since the period embraced by the last annual report." Dr. Robert R. Alexander, the medical superintendent, makes important observations in his report regarding the increasing numbers of lunatics requiring admission. "The regularity with which I have had from year to year during the last decade to chronicle an increase of the accommodation remains unbroken, but I think it will be found that the increase for 1898 has reached high-water mark and established a 'record' in the history of the asylum. ..... Our admissions numbered 1041 (348 men and 693 women), as against 511 (265 men and 246 women) in 1897, an increase of 83 men and 447 women being thus shown. It may be worthy of mention that a total of 1041 admissions is without parallel in the annals of Hanwell." Of the cases admitted 13 (10 men and three women) were criminals and four (two men and two women) were transfers from the criminal to the pauper-list on expiration of sentences. As to the principal causes of insanity, drink was assigned as the factor in 15 per cent. of males and 8 per cent. of females among the admissions, heredity accounted for 9 per cent. of the males and 17 per cent. of the females, and a predisposition from previous attacks was found in 15 per cent. of males and 14 per cent. of females. During the year 240 patients (96 men and 144 women) were discharged as "recovered." The recovery-rate is thus 9·9 per cent. of the average number resident. The deaths during the year numbered 246 (117 men and 129 women), which gave a percentage of 10 2 as calculated on the same basis. An epidemic of influenza visited the asylum and was accountable for a large proportion of deaths amongst senile and elderly patients. "The most notable features of this disease were the suddenness of the collapse and prostration and the speedy supervention of broncho-pneumonia or diarrhœa. ..... As in former years the staff were proportionately only slightly affected." There were three cases of enteric fever, of which two (a male patient and a nurse) succumbed. Ten cases of erysipelas (one male and nine females) were notified; all with one exception were mild and of the facial form. "This disease crops up every year as a sort of intimation that some parts of the building have not yet arrived at a state of hygienic perfection." A considerable number of cases of ulcerative colitis occurred, chiefly on the female side, and five of these proved fatal. 18 deaths were attributable to bronchitis and pneumonia, 25 to phthisis and tuberculosis, 33 to senile decay, and 59 to general paralysis. An important annexe, an iron building to accommodate 400 female patients, had been completed and was opened in April, 1898, to accommodate chronic cases drafted from the main building. This substantial increase to the building necessitated the appointment of a sixth assistant medical officer, and for the same reason 45 nurses and servants were added to the staff. The asylum well has been lined with cast-iron cylinders to a depth of 40 feet from the ground level, to prevent risk of contamination from surface water or sewage, at a cost of £809 10*s.* 5*d.* Further works in the way of improvement and extension of the existing buildings have been in progress, a sum of £27,000 having been voted by the London County Council in addition to the amount of £41,000 originally granted for these works.

THE LANCET.

LONDON: SATURDAY, DECEMBER 23, 1899.

VERY many have been the methods introduced during the past twenty years for the treatment of consumption. Those that had for their object the direct destruction of the tubercle bacillus have only ended in disappointment; those, however, that aimed at combating the second etiological factor—namely, the diminished resistance on the part of the animal tissues—have been more successful and have finally culminated in what is commonly known as the "open-air treatment." Although this therapeutical measure has been more extensively practised in Germany than elsewhere, yet English physicians and surgeons have now had opportunities of gaining experience in the various details required for the successful carrying out of this treatment. This is well shown by the practical nature of the debate arranged by the Council and officers of the Royal Medical and Chirurgical Society which brought forth valuable expressions of opinion from a large number of medical men, many of them leaders of professional thought.

Dr. J. KINGSTON FOWLER, in opening the discussion, paid a due tribute to Dr. BREHMER, who was the first to systematise the therapeutic methods which consisted in (1) the residence of the patient in a sanatorium under constant medical supervision; (2) complete freedom from excitement of all kinds; (3) a life spent in the open air; (4) rest during periods of the disease attended by fever; (5) methodical hill climbing as an exercise when fever was absent; (6) an abundant and varied dietary in which vegetables occupied an important place; and (7) hydro-therapeutic measures. These various headings may be taken as the lines upon which English physicians are working; a few modifications have been made by different observers, but they are unimportant. Complete unanimity was shown by the speakers who took part in the discussion as to the general efficacy of the treatment, although naturally there was some difference of opinion as to details. Nomenclature, for example, came in for considerable discussion. Dr. KINGSTON FOWLER considered that the term "open-air treatment of consumption" was misleading and suggested as an alternative "the sanatorium treatment of pulmonary tuberculosis." "Pulmonary tuberculosis" is certainly a better term than "consumption" to describe the disease when attacking the lung; but, as Mr. PEARCE GOULD and the President of the society (Mr. BRYANT) pointed out, fresh air and good feeding are equally important in the treatment of tuberculosis of the joints, glands, testicle, and bones. Sir WILLIAM BROADBENT preferred not to discard the term "open-air" altogether, for the words indicate the prime factor in the methods involved; whilst Sir R. DOUGLAS POWELL thought that "sanitary or hygienic treatment" would be more comprehensive. With this we are inclined to agree.

The question of the necessity for "sanatoria" to carry out the treatment was naturally debated and some interesting remarks were made by Professor R. W. BOYCE, Dr. THURNAM, Dr. G. V. POORE, and Dr. S. T. PRUEN on the suitable construction of the required buildings. Most of the speakers, whilst admitting the necessity of such institutions for the poorer classes, doubted whether they were advisable for all classes, Dr. SIDNEY MARTIN believing that good results could be obtained without sending the patient to any institution, one of his objections to sanatoria being that there was a danger of hypermedication. The general opinion seemed to be a mean between the two extreme views—viz., that whilst some patients could be perfectly well treated by their own practitioners others would do better under the more strict *régime* of a sanatorium. Dr. KINGSTON FOWLER and Sir HERMANN WEBER laid stress on "individualisation of treatment," and doubtless a study of personality is an essential part of the system likely to be lost sight of in sanatoria. Dr. CLIFFORD ALLBUTT drew rather a gloomy picture of some sanatoria in which the patients were not allowed to read novels and newspapers and had about them so few of the amenities of life that they lapsed into a condition of imbecility. Such regulations, however, must be exceptional, and they are certainly not followed in the institutions which adopt the one at Nordrach as a model. The importance of constant medical supervision was clearly made out. The majority of cases which come under treatment are those of young adults, and it was the general feeling that in matters of diet, rest, and exercise the patients require to be under constant control. A few such patients may be treated at home from the first, but the majority of them will yield much better results if they are placed, for a time at any rate, in a sanatorium where they can thoroughly learn the principles of the treatment; for, as Sir R. DOUGLAS POWELL and others pointed out, one of the chief advantages of a sanatorium is educational—to instruct the patients in the manner of life they should lead. A cardinal feature of the treatment, whether within or without a sanatorium, is that each patient should be kept at rest if the normal temperature exceeded 100·5° F., and a considerable difference of opinion arose as to whether it were better to take the temperature in the mouth or in the rectum. Dr. KINGSTON FOWLER'S observations strongly pointed to the conclusion that the rectal temperature was more to be relied upon and that being so the "æsthetic" objection, as it was elegantly termed, should be waived.

The tone of the whole debate showed that the medical profession is decidedly in favour of extending the trial of the open-air, sanatorium, or hygienic system (whichever term may be adopted) of the treatment of tuberculosis, and as a result of the discussion no doubt renewed efforts will be made both by physicians in private practice and by public institutions to arrange for the carrying out of what promises to be the most successful therapeutic measure against tuberculosis yet introduced. Sir WILLIAM BROADBENT, however, sounded a word of advice to which the public as well as the medical profession will do well to listen. The establishment of sanatoria must be conducted on scientific, and not on

commercial, lines. The earning of dividends should not be introduced into the question. In other words the institutions should be as far as possible the properties of medical men and not of public companies; otherwise the monetary profits may hold a superior place in the minds of the proprietors to the benefits of the patients, and the sanatoria will run a serious risk of degenerating into fashionable hotels in the same way that many so-called hydropathic establishments have. In the treatment of tuberculosis rest and quietude are absolutely essential. Social festivities must be absolutely excluded during the period of time for which a patient is under treatment, for he must devote all his endeavours to recuperate his general condition so as to make his tissues unsuitable to the growth of the bacillus. Late hours and irregular meals are incompatible with success, and although certain amusements are desirable as obviating too much concentration of the patient's mind on his own condition or on that of his fellow patients, yet strict and constant attention to hygienic details is absolutely necessary and this will not be ensured if the friends of the patients are allowed to reside in unlimited numbers within the sanatoria, or if the daily round of the establishment is ordered in imitation of the programme of a hotel in a fashionable watering-place.

THE Empire is passing through a crisis undoubtedly of great gravity and, if we may believe certain critics, is engaged in a death struggle for supremacy. From all quarters of the foreign press we hear that the South African dilemma means that conscription is for the future a necessity for Great Britain and Ireland. We shall not here—for it is in no wise our duty to do so—discuss the question from the political or the military point of view, but assuming that conscription does come about (and nearly every nation for whom at present conscription is part of her national life informs us that it must come) we propose to consider the matter from the medical standpoint and to see what effect conscription—i.e., compulsory military service for all able-bodied males between certain ages—would have upon the health and *morale* of the nation at large. In ancient civilised communities, such as, for instance, the ancient Hebrew nation, the various States of Greece, and the Roman Republic, every able-bodied male was considered as a soldier and was compelled to take his share in the defence, at any rate, of his country, if not in wars of conquest. In Rome as the Republic became converted into an Empire this ideal gradually disappeared, until from the well-drilled and patriotic legions of the first Cæsar the defensive army of the State began to depend more and more upon mercenaries, so that at the close of the Eastern Empire in 1453 the defence of the Empire was almost entirely dependent upon foreigners—namely, the Varangian Guard, who were mainly, we may be proud to say, Englishmen. In later years private enterprise often equipped soldiers for the defence of the State or the Constitution, as in our own civil wars in the seventeenth century; but it was not until the era of the first French Revolution that the old idea of the state as a *res publica*—a thing of interest to every man—was revived, and all Frenchmen were pronounced to be soldiers and as such liable to be called upon for defence. This by the irony of fate developed into the Napoleonic conscription, perhaps the most crushing engine of military despotism ever devised, and the same system but with modifications has remained as the only means whereby the great military Powers of the continent—namely, France, Germany, Austria, Italy, and Russia—maintain their armaments.

So far, our mother land, having no land frontiers, has been able to maintain her position without compulsory military service, but times change and not a few who are in a position to know judge it likely that this happy state of matters can exist no longer. Universal military service has many advantages for a nation as a whole. Between the ages of from about 18 to 25 years every able-bodied male is liable to be called upon to enter the army and to put in seven years' service. In very many cases—we speak from a strictly medical point of view—this is an excellent thing in theory. The young recruit learns discipline, self-sacrifice, is well housed, well fed, and exercised so as best to develop his physical powers. Nowadays the boy of the upper middle and upper classes goes to a public school where he learns invaluable lessons. He learns, or, if he will not learn, is taught, how to comport himself with due modesty towards his fellows; he learns not to think more highly of himself than he ought to think; and as he rises in the school he learns how to command his fellows. He lives by rule, is well fed, and takes plenty of wholesome exercise. But the youth of a lower class, as things are constituted nowadays—unless, indeed, he goes into the navy or the army—is practically his own master from the time when he leaves a National or Board school at about the age of 12 years. The old apprenticeships are, except in one or two trades, quite done away with and the boy grows to manhood without ever having had to submit his will to any one. This, we have no hesitation in saying, is by no means a good thing either for individuals or for the State which such individuals compose. Compulsory military service would change all this for the better and would so far be a benefit that it might largely abolish Hooliganism, but there can be no doubt that it would also bring certain evils in its train.

First, of course, comes the inevitable interference with trade and commerce. For the upper class engaged in commercial pursuits in this country such interference would, under our system of education, be very serious. At the age of 18 years such a citizen is just beginning his life in counting-house or office and even supposing that he only serves the minimum term of seven years with the army it is all but impossible, at all events under present conditions, for anyone to begin to learn a trade or profession at the age of 25 years. Yet conscription need not go hand-in-hand with the ruin of trade where systems of education are adapted to both. It is obvious from the example of the German Empire that a country which can keep an army of over 500,000 men on a peace footing and of nearly 4,000,000 on a war footing, to which army all classes contribute their sons, can yet be pre-eminent in commercial pursuits. Conscription, however, is a thing so foreign to the British cast of mind that we doubt whether it will come, in at all events its most acute form; but probably the system of recruiting our army will have to be altered. We

have for home defence an invaluable reserve in the volunteer force, and we have no hesitation in saying that, if the War Office liked, this force could be made of much more value than it is. If conscription is not to be, volunteering must be made less expensive to both officers and privates than it is at present. The physical examination for the volunteers is not nearly so strict as for the regular forces, and in our opinion it might be as well to modify some of the rules regarding the relation of height to weight which now obtain. The arbitrament of the sword is so horrible—we may almost say so useless—that it is one to be avoided at nearly all costs. But if, as seems at present, it cannot be avoided in every case, the best way of avoiding it is to be as well prepared for its occurrence as possible. We in this country must not shrink from defending our inheritance. The flower of the nation is spending its blood in South Africa, and it may be that the outcome will be that we shall eventually have to face conscription. If so let us remember that obedience, temperance in its widest sense, and habits of discipline are invaluable to nations as well as to individuals. Some adjustment of commercial usages there would have to be, but without advocating or wishing for conscription we would say that its moral and physical advantages go far towards counterbalancing its obvious disadvantages and necessary sacrifices.

THE sudden and quite unexpected death of Sir RICHARD THORNE THORNE, K.C.B., F.R.S., Principal Medical Officer of the Local Government Board, came as a terrible shock to the public health service, and, indeed, to the country generally, on Monday last. The hand of death has been busy of late years amongst the members of the Medical Department of the Local Government Board; T. W. THOMPSON, BARRY, and now THORNE have been suddenly taken from that service and each, be it told to his credit, has fallen with his armour on and in the midst of the fight. On Saturday last Sir RICHARD THORNE, though confined to his bed, completed his day's, and as it turned out his life's, work, and before the official hour of 10 on Monday morning he had gone to his last rest.

Of Sir RICHARD THORNE'S work we are speaking in detail in another column, but we wish here to bear testimony to the loss which public health administration and epidemiology have sustained, and to place on record the sincere appreciation of THE LANCET of the labours of his life. Sir JOHN SIMON, who, by the way, has seen three of his successors in the medical officership of the Local Government Board—Dr. SEATON, Sir GEORGE BUCHANAN, and Sir RICHARD THORNE—pass away, tells us in his "English Sanitary Institutions" that Dr. THORNE was appointed to a permanent Medical Inspectorship under the Privy Council at the close of 1870, and that prior to that date he had distinguished himself as a temporary inspector; so that Sir RICHARD THORNE had at the time of his death practically completed 30 years' service to his country. Those who are familiar with the difficulties of initiating and carrying out reforms under circumstances where conditions other than medical must of necessity be duly weighed will be satisfied that few could have done more than did Sir RICHARD THORNE to forward the true interests of that branch of the medical profession over which he so ably presided. It would have been difficult for the medical officers of health of this country to have had a stronger or more able advocate of their true interests than was Sir RICHARD THORNE. Permanency of tenure, adequate pay, and an improved status, were points for which he was ever fighting, and that which has in this direction been actually attained is due in no small degree to his persistent efforts and invariable tact. An aptitude for gaining the ear of those in authority is a most valuable and useful possession to one in the position of Medical Officer of the Local Government Board, and this power Sir RICHARD THORNE enjoyed in an altogether exceptional degree. High literary qualities characterised all his writings, and his summaries of the work of his department, as set forth in the annual reports of the medical officer, will long remain monuments of lucid exposition; while his Presidential Address before the Epidemiological Society in the session 1887–88 on "The Progress of Preventive Medicine during the Victorian Era" is an admirable example of a somewhat freer and more eloquent style. It is impossible in any just estimate of his work to omit mention of the far-reaching effect which his classical volume on the use and influence of hospitals for infectious disease has had upon the isolation accommodation of this and other countries. This book, written as a blue-book, has passed through many editions and has for nearly twenty years been the standard which has regulated the erection of fever hospitals throughout the country, thus playing an immense part in reducing the incidence and fatality-rate of infectious disease. Mention, too, must be made of his Milroy Lectures on Diphtheria: its Natural History and Prevention, in which work he first drew attention to what he called "the progressive development of the property of infectiveness" of diphtheria, a thesis which has received very considerable support on epidemiological grounds, as well as from bacteriological researches and the evidence of natural history. It was, too, in these lectures that he brought prominently to the notice of the public the influence which our public elementary schools might exert on the spread of diphtheria.

Nominally the Medical Officer of the Local Government Board, Sir RICHARD THORNE was in reality far more, and it is conceivable that in what may be termed his outside work his great influence has been and will be most widely and lastingly felt. Of this nature may be regarded his labours in the cause of sanitary reform and the education of the future medical officers of health which his position as Crown nominee upon the General Medical Council enabled him to exert. Similarly under the same head may be classed his valuable services—for as a cross-examiner he was hard to beat—upon the Royal Commissions on Tuberculosis and upon Sewage Purification; and, above all, his constant and able advocacy of the cause of medical inspection as opposed to quarantine at the several International Sanitary Conferences to which he was at one or another time delegated by different Prime Ministers. At all of these conferences the part he took was a very prominent one, and his intimate knowledge of the French tongue enabled him to put forth his views with a vigour and eloquence which will long be remembered by those who were his associates on such occasions. It was largely in connexion with Sir RICHARD THORNE'S successful efforts

at these Conferences that Her Majesty the QUEEN on two occasions conferred upon him decorations of the most honourable Order of the Bath. The full harvest of Sir RICHARD THORNE'S work has not yet been reaped, and it is not too much to say that the influence which he, through the Foreign and Colonial Offices and through other departments of the State, has exerted upon the port sanitary administration of our numerous colonies throughout the world cannot fail to have its response in the improved sanitary administration in the interior of such colonies. The calm and successful manner in which Great Britain has met the threatened invasion of this country by cholera and by plague has been the envy of the civilised world, and it has led other European countries to imitate British methods. Next year we may have to meet a bombardment of our ports by plague, and the part which Sir RICHARD THORNE has had in developing and maintaining our well-equipped port sanitary defences should then be gratefully remembered.

Sir RICHARD THORNE at the time of his premature decease was rapidly becoming the Minister of Public Health of the Empire, and we feel sure that in addition to the universal regret which will be felt throughout the public health services, and by all those who have the progress of preventive medicine at heart, Mr. CHAPLIN will be by no means the only Cabinet Minister who will sincerely deplore the loss of so indefatigable, wise, and trusted a public servant.

Annotations.

"Ne quid nimis."

THE LAW AND THE LEICESTER GUARDIANS.

THE guardians of Leicester seem to have realised at last that to refuse to obey a statute enforced by the peremptory order of the High Court of Justice because one holds views upon vaccination that differ from those of the civilised world at large is to resemble a man who, because he objects to a macadamised road, sits down on it when it is being laid and makes faces at the steam-roller. The roller moves very slowly towards him; it may stop—not because he makes faces but because those who control it pity him as a lunatic; on the other hand, it may show every intention of going on, and if it does so he had best get out of the way even at the last moment, for to be rolled by a steam-roller is unpleasant to the person rolled, though the operation in no way inconveniences the steam-roller. Months ago 45 Leicester guardians not only refused to appoint a vaccination officer but made a sort of inane demonstration in London to listen to legal arguments as to whether the court could issue a mandamus to compel them to obey the law. The mandamus was issued and after a time a minority of the 45 avowed themselves willing to obey, a small majority voting for a return to the writ that would not only have been a technical contempt of court but an actual impertinence. A writ of attachment was then applied for and a rule *nisi* granted for it, so that about 25 Leicester guardians saw themselves in some danger of imprisonment. Accordingly, a few went over and a narrow majority voted for the appointment of a vaccination officer, so that everyone thought the matter was at an end. A gentleman was in time appointed, selected from 19 candidates a day or two before that on which the rule for attaching the refractory members of the board should have been made absolute. On that day the Crown pointed out that the Local Government Board had not yet approved the appointment, which might be illusory, and one of the judges expressed a desire that the refractory members of the board, named as individuals on the writ of attachment, should give individual explanation of their conduct. At the next and last hearing it was revealed that the person who was selected as a fit and proper person to perform the duties of a vaccination officer, and who had expressed himself willing to enjoy the emoluments of that post, was, or had been, by profession a journalist, which neither qualified nor disqualified him, and, further, had been summoned for having an unvaccinated child, while he then had children without certificates of exemption and unvaccinated. Besides this he seems to have expressed intentions as to the light in which he should regard the duties which he was to be paid to perform. When the time came for the divisional court to be informed of this the guardians had realised that their last absurdity had put it out of their power to even claim to be honest faddists, and that such an appointment as they had made could only be regarded either as an attempt at deception or an act of impertinence. It was done; they could not undo it, so they humbly begged forgiveness and promised to make a genuine appointment, a promise which seems to show on their part knowledge of the nature of their first selection and their power to have done otherwise. So now the rule for attachment is made absolute, but no further steps will be taken with regard to it if by a certain date the Leicester guardians have obeyed. Four guardians have been excepted from the writ through the clemency of the court, two of them being ladies, and the law may be considered to have won the day. A steam-roller may not have the same rapidity or recklessness of onslaught as a thunderbolt, but it is of no use to make faces at it.

DENTAL APPOINTMENTS AT GENERAL HOSPITALS.

THE attention which the medical profession is now giving to the relation of dental to general diseases demands that every care should be taken in the selection of suitable men to fill the posts of dental surgeons to the general hospitals to which medical schools are attached. In our opinion these posts should only be given to those holding a medical in addition to a dental qualification. The duties connected with such posts demand special qualities in those occupying the positions, for in addition to the ordinary dental operations a large number of patients come under observation with affections which belong to the borderland between dental and general surgery. To give any sound advice in such cases it is needful that the dental surgeon should possess a thorough knowledge of disease in general, and it is difficult to understand how this can be given except by one who has received the dual training. The curriculum for the L.D.S., we are aware, provides for teaching in general medical subjects, but it is well known that the possessor of the solitary L.D.S. diploma has but small knowledge of general diseases and is therefore, in dealing with such cases, quite incapable of bringing to bear upon the subject that wide area of knowledge possessed by the man holding an additional medical qualification. Again, it must not be forgotten that the students such officers are called upon to teach are studying for medicine and that therefore the teacher should possess knowledge at least equal to that of those whom he is teaching. In the dental departments of general hospitals a large proportion of the patients are suffering from other diseases and there is therefore a splendid field for investigating the bearing of dental on general diseases, and *vice versâ*, but this material cannot be utilised on scientific lines except by one who has a knowledge of disease as a

whole. There are, indeed, if it were needful, more arguments to be advanced in favour of appointing as dental surgeons to our general hospitals only those possessing both dental and medical qualifications. In seven out of the nine teaching hospitals the dental surgeons are thus qualified; in the remaining two it is, we believe, not a *sine qua non* that the dental surgeon to the hospital should possess a medical qualification. We hope, however, that in the near future this will be changed when the authorities of these institutions recognise the importance of the points which we have urged.

THE ELECTRIC LIGHT IN MARYLEBONE.

THE failure of the electric light during several hours of the evening in parts of Marylebone has pressed rather heavily upon the residents in and around Harley-street and Wimpole-street. The inconvenience has been felt for several weeks past and many alarming though unfounded reports have gone abroad as to the supply of current in the future. For example, it has been freely stated that the inconvenience is likely to continue for another 12 months or more. As the matter concerns a section of the medical profession so closely we have made inquiries in a well-informed quarter and have reason to believe that the difficulties of the supply company are now very nearly, if not quite, over. The company concerned in the matter have now two very large dynamo machines erected at their new Willesden station; these are just commencing to run and are of 1200 horse-power each, and are additional to the company's generating-stations in London. A few finishing touches only are needed and probably before these lines are in print the big units at Willesden will have begun to carry the load. All difficulties from shortness of supply will then vanish.

CHRISTMAS BEER AT THE WORKHOUSES.

AT Bolton, Bury, Prestwich, and many other places the guardians have been exercised in mind as to whether the inmates of the various workhouses in their charge should, or should not, have beer with their Christmas dinners. The arguments for and against were in some cases amusing. At Bolton it was proposed that the inmates should have roast beef and plum pudding (quantity limited), with one half-pint of tea, coffee, cocoa, or milk, also snuff and tobacco for the adults and oranges and nuts for the children. An amendment was brought forward allowing half-a-pint of beer if it were preferred. The gentleman who seconded the amendment said the beer only came once a year, was beneficial, and would "lubricate the inmates," but he vouchsafed no explanation of the lubrication which he advocated. The feeling of the board was against the revival of the old custom of giving beer, and one of the guardians put the case logically by saying that "a large number of those in the workhouse were there through drink, and by allowing any beer at all the guardians would be encouraging (its use) and admitting that there was no harm in drink." In the end six voted for the beer and 27 against. At the Bury Board a motion against beer was lost. It was stated that "two years ago the inmates had no beer and enjoyed the Christmas far better than with it." This was disputed by one of the guardians who said "that that very Christmas two of the men scaled the walls and were brought before the magistrates next morning, whilst last year when beer was given not a single man scaled the workhouse walls." Dr. K. M. Chisholm "contended that each member carried a personal influence and that the drink question gave more work to gaolers, workhouse masters, clergymen, and doctors than any other." At Prestwich it was urged that as the inmates could do without beer for 12 months it was surely not necessary on Christmas Day, and that if given it stimulated the old craving for drink. At the close of the discussion 14 votes were given for the beer and five against it. Several guardians suggested that fruit and mineral waters should be offered in lieu of beer and it is understood that this will be done. If the present severe weather continues the demand for mineral waters is not likely to be brisk.

THE CASE OF SUSPECTED PLAGUE AT PLYMOUTH.

THE Peninsular and Oriental steamship *Ballaarat*, which arrived at Plymouth on Dec. 16th, reported that she had a suspected case of plague on board. The patient was one of the native crew, a coal-trimmer, about 35 years of age, and was taken ill two days after leaving Gibraltar, his symptoms being a high temperature and swollen glands. He was immediately isolated by the surgeon of the *Ballaarat*. Mr. F. M. Williams, the port sanitary officer, immediately visited the *Ballaarat* before anyone boarded or left the vessel, and after he had seen the patient, who is believed to be suffering from plague, proceeded to inspect the passengers and crew, Europeans as well as natives, 280 in number. Arrangements were then made for the transfer of the patient to the hospital ship *Pique* in Jennycliffe Bay. The necessary purification measures were then thoroughly taken, and the *Ballaarat* was at the expiration of about two hours from the time when the medical officer of health was first communicated with freed from detention and allowed to proceed on her voyage to London. Certain of her passengers were landed at Plymouth, but before they were permitted to do so their names, addresses, and destinations were taken down and the sanitary authorities of each district were apprised of their approach.

"BRITISH STOICISM."

OUR Rome correspondent writes:—In contrast to the unchivalrous, not to say ignoble, exultation of France, Russia, and I am sorry to say Germany, over the British reverses in South Africa, Italy's demeanour is altogether commendable. In dignity and honourable feeling she towers "a head and shoulders" above her continental sisters. Quite appreciating the pluck, the coolness, and the excellent military qualities of the Boers, she has nothing but praise for the yet greater coolness and pluck with which their British antagonists accept repulse after repulse and brace themselves for yet another encounter. Equally unstinted is her praise of the "manly stoicism," as she calls it, with which the people of the British Isles receive unwelcome tidings—tidings which, of a much less grave tenour, sufficed to make France lose her head and Italy herself to give way to an almost hysterical despair. French and Italian defeats in Tonquin and Abyssinia hurled their respective Governments from office and drove their people into a wild hunt after "scape-goats," although their Latin mother had shown them an example by meeting Varro at the gates of Rome after the rout of Cannae to thank him, through her Senate, for "having not despaired of the Commonwealth." The British, in Italian estimation, are indeed the "modern Romans," and deserve the tribute conveyed in the splendid simile put by Horace (Odes, IV., 4, 57) into the mouth of Hannibal when weighing his undying enemies in the balance:—

> "Duris ut ilex tonsa bipennibus
> Nigrae feraci frondis in Algido
> Per damna, per caedes ab ipso
> Ducit opes animumque ferro."
>
> (As oak-tree 'neath the woodman's axe
> On dark-leaved Algidus doth wax
> Through loss and lesion, to reveal
> Fresh vigour from the wounding steel.)

It is in this sense that the *Tribuna* of Rome, the *Nazione* of Florence, and the *Corriere della Sera* of Milan, the leading journals of metropolitan, central, and

northern Italy respectively, comment on "quella calma che è abituale al popolo Britannico," and augur ultimate success to its arms as conducive to the best interests of civilisation. This "calma" of Italian eulogy, conspicuous in the stay-at-home Briton, is yet more admirable in troops exposed to a tempest of lead; but most admirable of all is it when displayed by the medical staff, steadily and effectively performing its beneficent work within range of the enemy's "dead shots." No incidents of a campaign already rich in deeds of heroism have redounded more to the honour of the British army than the conduct of its ambulance service on the fields of Stormberg and Magersfontein. When history comes to be written it will put on record names already known, and doubtless others yet to be revealed, of medical officers whose fearless devotion to duty and consummate professional skill in conditions trying even to the strongest nerve in a civilian hospital posterity will not willingly let die. Reflections such as these are not without their consolatory virtue even in the sombre hour now passing and must combine with yet higher sources of comfort to mitigate the sorrow that has settled down on many a home and household where—

"Sadly falls the Christmas Eve."

PHTHISIS IN ASYLUMS FOR THE INSANE.

DR. F. G. CROOKSHANK has published in the *Journal of Mental Science* (October, 1899) an essay on the above subject for which the bronze medal of the Medico-Psychological Association was awarded. He gives good reasons for supposing that "the true phthisis death-rate of asylums is something not much less than twice the 'official' rate. It is certainly half as high again." This conclusion is reached after a careful comparison of official returns (which must of necessity be brief and simple) with the fuller records and observations made at necropsies. The report made by Dr. John Tatham to the Royal Commission on Tuberculosis is quoted, whence it appears that during the quinquennium 1891–95 the mortality from phthisis among the general population in England and Wales was 1463 "per 1,000,000 living at all ages." The age period of greatest mortality during this quinquennium was that of males between 35 and 45 years of age; in this group the mortality was 3268 per 1,000,000 living. Taking the parallel of the asylum population, whose "average resident population" corresponds to the "number living" of Dr. Tatham's report, it is found that "official" returns establish a proportion of deaths from phthisis equivalent to 11 per 1000 for all Scottish asylums, 15 per 1000 for all English and Welsh asylums, and 24 per 1000 for all Irish district asylums. Bearing in mind that the "true" death-rate is from one and a half to twice that of these "official" ratios it will be seen that the mortality from phthisis is (for all English and Welsh asylums) equal to from 35 to 45 per 1000 of the average asylum population. The mortality from phthisis of the general population of England and Wales is 1·46 per 1000 and if the age-group between 35 and 45 years is taken the mortality is 2·3 for females and 3·27 for males. It appears from data which appear in the report of the Royal Commission on Tuberculosis (1898) that "after every allowance has been made the mortality from tuberculous disease (in all its forms) has steadily fallen since 1851 to 1860, and that every age-period for which statistics are available shows a decrease often considerable." Dr. Tatham finds that "comparing 1891 to 1895 with 1851 to 1860 ..... phthisis mortality in males of all ages has been reduced by about one-third and in females by more than one-half." From a collection of statistics of various English asylums it appears (according to the figures of Dr. Crookshank) that "in the early seventies the phthisis mortality was distinctly higher than in later years. It also seems that of late years, although the death-rate from all causes has sensibly declined, the percentage of deaths due to phthisis has increased in rather greater proportion. In other words, there appears to be an arrest of the decline in the phthisis death-rate, if not an actual tendency to increase." From further observations made Dr. Crookshank concludes that "not *more* than 7·5 per cent. of cases admitted [to asylums] are phthisical, and that in about 10 per cent. a family tendency exists ..... that four-fifths *at least* of [asylum] cases contracted phthisis after admission to the asylum. ..... Overcrowding may exist in workhouses, in infirmaries, in Whitechapel sweating dens, and in the slums of Somers Town; but nowhere save in asylums are there such aggregations of tubercular persons whose malady is complicated by persistently uncleanly habits. Chemical disinfectants cannot be generally employed. ..... Small wonder surely that farm labourers taken from the plough and placed in a crowded ward so often die of phthisis in a year or two." Dr. Crookshank concludes by recommending isolation and open-air treatment in separate blocks or sanatoria holding each, say, 200 patients and a due regard for disinfection of sputa, the sterilisation of the milk-supply, and an enhanced and more generous dietary (containing more fat) for patients. Gardening and out-of-door occupation are to be enjoined in all suitable cases.

THE DIAGNOSIS OF SMALL-POX.

IN consequence of the occurrence during the past year of an eruptive contagious disease in many parts of the continent of America presenting some of the characteristics of small-pox the Provincial Board of Health of Ontario has issued a circular to physicians, medical officers of health, and members of local boards of health of Ontario dealing with the diagnosis of small-pox. The epidemics in the United States in a large proportion of cases having caused a very low mortality there has as a consequence of this resulted in many instances a failure to diagnose their true character. Inasmuch as, especially in cold weather, such mild epidemics may take on all the virulent characteristics of small-pox the Provincial Board of Health desired to make all who might professionally or officially come in contact with the disease acquainted with the direction in which the normal characteristics of small-pox might be modified. The authority is then quoted of physicians in Canada and the United States for saying that among the common symptoms of small-pox which are absent are prodromal fever, secondary fever, and destruction of the true skin. In conclusion, it is suggested in the circular that wherever any case where a rash with anomalous symptoms appearing to exclude the connexion with varicella, scarlet fever, measles, or erythema "occurs in the practice of a physician he will best consult his own comfort and interest by reporting his suspicions promptly to the local health authorities who, knowing their responsibility, make it a regular practice to report to the Provincial Board, and in the meantime isolate the case, vaccinate the family and others exposed, and await the progress of the case till its true nature is finally determined."

THE SANITARY CONDITION OF ALDERSHOT.

ALDERSHOT is now almost empty of troops, and for the time being the great military camp wears the look of a deserted city. Correspondingly in the usually busy town of Aldershot, which depends for its existence on the camp, just now little is doing. It would seem, however, from Dr. R. J. Reece's report upon Aldershot and its diphtheria, which we review elsewhere, that if the city fathers are suffering from a period of enforced leisure from business they may find ample and useful employment in turning their attention to amending the sanitary state of their town.

Numerous unwholesome conditions which are brought to light in this report affect not only the civil population of Aldershot but indirectly have important concern with the health of the military population in the camps, a fact clearly brought out by Dr. Reece in his inquiry into diphtheria at both places. The question of diphtheria has for some years been a serious one. In Aldershot town the annual attack-rate by this disease has steadily increased year by year till in 1898 it stood at 9 per 1000, while from time to time in the camps severe epidemics have occurred—in that of 1895, for instance, the attack-rate was as high as 23 per 1000 of military population. Fortunately, the matter has lately received increased attention from the Army Medical Department, and the action lately taken to control the spread of diphtheria in the camp appears to be thorough. The progress made has largely been due to the work of the late Captain Louis Hughes, R.A.M.C., unhappily killed last week at Modder River, who was appointed special sanitary officer to the camp two years ago. It is, however, evident that so long as conditions which foster the spread of infectious diseases such as diphtheria are allowed to go unchecked in the town of Aldershot the best-contrived preventive measures adopted at the camp are likely to be rendered futile.

THE CLINICAL POSITION OF IMPETIGO.

THE *Journal de Clinique et de Thérapeutique Infantiles* of Nov. 30th contains an article by Dr. Morel Lavallée on the Pathology and Treatment of Impetigo. The writer's views on this subject are not quite the same as those usually accepted, but they are for this reason somewhat interesting. While admitting the constant presence of the commonly reputed cause, the staphylococcus aureus, in the impetiginous vesicles, he is disposed to question its causal influence. He is ready to grant that the more sluggish and related processes of ecthyma, furuncle, and their allies may fairly be explained by the presence of this organism, but he claims that its morbific energy is not sufficient to explain the acute and markedly contagious evolution of true impetigo. What germ is to be held accountable for the latter he does not decide but he suggests a possibility that it is a streptococcus. This opinion is already associated with the names of Unna and others and it certainly possesses a substantial basis both on pathological and clinical grounds. The treatment advocated by Dr. Lavallée does not vary in any essential character from that with which most of us are familiar. It is significant, however, of his pathological opinion and undoubtedly in accord with sound practice that he attaches much importance to the very free use of antiseptic, non-irritant lotions before the usual emollients are employed. Very weak mercurial solutions and a dilute lotion of zinc sulphate and copper sulphate are specially mentioned.

THE INTERNATIONAL MEDICAL CONGRESS, PARIS, 1900.

DR. CHAUFFARD, the Secretary-General of the Congress, has issued a notice saying that the Paris Executive has been considering the important question of housing foreign members who attend the Congress. It has been arranged that the Rector of the Academy of Paris will place at the disposal of the General Committee 800 beds in the various Lycées at Paris during the Congress week, and it is hoped that an additional 200 may be obtained, making a total of 1000. The price of each bed is fixed at five francs 50 centimes a day, to comprise bed, attendance, and the eight o'clock *petit déjeûner*. The beds, of course, are in dormitories and not in separate rooms, but the committee think they may be of service to those who come as bachelors and with purses only scantily lined. Nothing is yet decided about the distribution of these beds nor is the committee prepared to receive the names of those who wish to take advantage of them, but due notice will doubtless be given. The chief Parisian excursion agents are now ready to receive applications for rooms from intending visitors who do not patronise Messrs. Cook and Son, the agents recommended by the English committee. The names of the French agencies are (1) "Voyages Duchemin," 20, rue de Grammont, Paris; (2) "Voyages Modernes," rue de l'Echelle, No. 1, Paris; (3) "Voyages Pratiques," 9, rue de Rome, Paris; (4) "Agence Desroches," 21, rue de Faubourg Montmartre, Paris; and (5) "Agence Lubin," 36, Boulevard Haussmann, Paris.

THE USE OF LEAD COMPOUNDS IN THE POTTERY TRADE.

AN important circular has just been issued by the Home Office to the pottery trade giving notice of certain steps which the Home Secretary "proposes to take with a view to securing the protection of the workers in the china and earthenware manufacture from the danger of lead poisoning." The circular is so important and deals with so many points of extreme interest and of far-reaching effect that we propose to deal with the matter at length in a future issue, and shall for the present content ourselves with briefly indicating the drift of the propositions contained therein. The Secretary of State is satisfied that for many purposes leadless glazes can be adopted without injury to the trade and the special rules will therefore be relaxed for factories or processes in which no lead is used. Certain special rules which have up to now only applied to certain classes of workers are to be applied to the whole of the workers in lead processes and a new scale of fees for certifying surgeons is to be adopted. We are glad to see that a point upon which we have always most strongly insisted is taken up—namely, that only fritted lead glazes should be employed in cases where a leadless glaze is not used. Six months' further grace is to be allowed to manufacturers before this proposal becomes compulsory. Following upon this a standard of safety for frits is to be adopted within a measurable time. In the report of THE LANCET Analytical Commission on Some Leadless Glazes[1] we said "it may be hoped that the day is not far distant when the Government will be in a position to demand the abolition of raw lead in glazing and to compel the adoption of safe 'frits' or, better still, of leadless glazes without inflicting any hardship on the potter or causing any hindrance to the pursuit of his art." We are glad to be able to congratulate the Government on having taken this course.

SUCCESSFUL TREATMENT BY INCISION OF PURULENT PERICARDITIS.

IN the *New York Medical Record* of Nov. 25th last an account by Dr. H. Lilienthal of a case of purulent pericarditis given to the surgical section of the New York Academy of Medicine is reported. The case is a brilliant one. The patient was a boy, 15 years old. We have only space to give the chief points of the narrative. A pneumonia was resolving when, on July 14th, a pericardial murmur was heard for the first time. On the 17th the pulse had been irregular with an increase in præcordial dulness. On August 3rd streptococci as well as pneumococci were found in the sputum but no tubercle bacilli. On August 13th the pulse was 132, feeble, and irregular. The next day the pericardium had been aspirated and 18·5 ounces of pus removed. On the following day (August 15th) there was cyanosis and the condition was too grave for general anæsthesia. Eucaine β was the anæsthetic selected and about 10 minutes before the

[1] THE LANCET, Jan. 7th, 1899.

operation the patient received 10 minims of Magendie's solution of morphine. One drachm of a 6 per cent. solution of eucaine had been used. Almost three-quarters of an inch of the fifth intercostal cartilage were removed about one-fourth of an inch to the outside of the sternum. The thickened mediastinal tissues, about an inch in depth, were incised under the guidance of an aspirating needle. When the pericardium was opened the pus gushed out very freely to the enormous amount of at least 40 ounces. Wilks and Moxon report a case in which 35 ounces were found post mortem. The wound was partly left open for drainage. About August 22nd the pulse had fallen to 110 and "daily irrigations with decinormal saline solutions had begun. On Sept. 7th the boy was allowed out of bed for the first time and on the 27th he was discharged cured. At the time of the report the pulse was good and the general condition most satisfactory. We congratulate Dr. Lilienthal on so rare a case and so happy a result.

THE FOREIGN PRESS ASSOCIATION IN LONDON.

A CONFERENCE of foreign and English journalists was held on Saturday evening at the Salisbury Hotel to discuss certain resolutions bearing upon the recent attitude adopted by many papers of all nations towards countries with which they happened to be in political opposition. The conference was summoned by the Foreign Press Association in London, the President of which, M. de Wesselitsky, occupied the chair. The following resolutions were carried unanimously:—

"1. The conference considers it most desirable to have excluded from the polemics of the Press insults against anyone or attacks on persons who are outside the pale of politics and precluded by their positions from replying. 2. The conference considers it contrary to the honour of the profession and to good comradeship among journalists to indulge in sweeping charges against the Press of other countries. 3. The conference would see with pleasure the introduction into the conduct of the Press of all countries towards each other of a spirit of urbanity and mutual tolerance."

THE ELECTRIC CURRENT AS A CAUSE OF FIRE.

THAT defective electric-light fittings may be a source of danger and the origin of an outbreak of fire finds illustration in a recent occurrence. A correspondent in the *Times* of Dec. 19th states that he observed one evening a smell of burning wood in his drawing-room, and shortly afterwards perceived rings of blue smoke coming through the crevices of the boards close to the hearth and beyond the edge of the carpet. On moving towards the middle of the room in order to ascertain what the matter was, his foot suddenly passed through the carpet and the floor, and flames immediately issued from the hole. Evidently the floor was ablaze, although combustion was somewhat stifled by the carpet. The fire was soon subdued without much damage being done. The result, however, might have been very different had the incident happened when everybody had retired to bed. It might have been more serious also if a lady's foot had sunk through the floor, for her dress would most likely have caught fire. The explanation of this outbreak seems to be that for some reason or other the wires became overheated or through bad insulation sparks struck across them. We should have thought that the first indication of something being wrong would have been at the lamp. Obviously, when the current takes a short cut none will reach the lamp. The laying of electric wires under the floor is to be deprecated and we were under the impression that it was prohibited by the Board of Trade. There is no need to use special insulating material in the casing if the wires are properly covered and attached to the lamp "leads." It is always desirable that the cases containing the wires should be in view so that any untoward event would soon be noticed before there was any chance of fire spreading. Further, as soon as an electric lamp fails to burn inspection should be immediately made, as unless the fuse has been destroyed the current may be passing by short circuit elsewhere with possibly dangerous results.

INFLUENZA.

MEDICAL practice in London is becoming more busy and more complicated by the re-appearance of many typical cases of influenza—characterised by sharp rises of temperature with headache, pain in the back and limbs, with or without nasal, laryngeal, or bronchial catarrh. In cases of the latter sort the temperature remains up for days, rising a little in the evening. The infectious nature of the disease is shown not only by the widespread diffusion of such cases but by many or all of the members of a household being similarly affected. The epidemic has too good an ally, unfortunately, in the weather, with its fog and its tendency to frost. It is to be hoped that the public will remember that the best way of meeting the influenza is to treat it with consideration, to avoid quack remedies, and to send promptly for the medical adviser. Its protean forms occasionally puzzle even him; but we may be sure that the disease will be still more baffling to the unaided lay mind.

OCULIST SEALS.

M. LORET, chief of the French Archæological School at Cairo, has determined the Egyptian hieroglyphic name for alum (the Greek στυπτηρια) which he reads "abennou." He traces it to the Ebers medical papyrus, among other texts, where it is mentioned as forming part of a collyrium invented by a physician of Byblos in Syria. Among other ingredients of his recipe were minium, salt, antimony, barley, and dates. The usefulness of alum as a remedy for diseases of the eye is extolled by Pliny—"oculorum medicamentis inseritur apte," he says, then indicating what special maladies it is to be applied to. Dioscorides also praises it for similar purposes. The latter advocates it as beneficial for tumours and excrescences, as long before his time does another Egyptian medical papyrus preserved at Berlin, which recommends an anointing with oil sprinkled with alum. Alum is particularly abundant in Egypt and Herodotus says that Amasis offered 1000 talents of it as a donation towards restoring the temple at Delphi. In this he was but imitating the generosity of his predecessors, for in the largest known papyrus, which enumerates the gifts of Rameses III. to the temples, he is credited with presenting large quantities of alum, also minium, mica, and silicate of copper.

THE ROYAL ARMY MEDICAL CORPS AT MAGERSFONTEIN.

DEEDS of heroism have not been few during the course of the war in South Africa. At Magersfontein under sufficiently trying conditions they seemed to come about as if merely the ready answer of discipline to the necessities of the situation. Officers and men exhibited the same alert unselfishness, the same enduring fortitude. We note with particular satisfaction that the Royal Army Medical Corps conducted itself on that day in an admirable manner. It is reported that the prompt attention to the wounded under a hot fire was remarkable and the more so that the enemy appeared to direct their aim upon the points where field ambulances were at work. To select instances appears almost invidious. Doubtless much more has been done than told. But it is cheering nevertheless to have news of such incidents as that in which a soldier went within 300 yards of the Boer trenches under a hot fire and brought back a wounded man; or that other in which a medical officer coolly walked up and down the

firing line seeing to the wounded under a hail of bullets. This deliberate attention to duty is, we know, by no means rare. For this reason it is the more gratifying.

SIR HENRY HARBEN writes that the Golder's-hill estate was conveyed on Monday last to the London County Council, and is now dedicated to the public. A meeting of the executive committee will be held early in the new year, and a report and statement of accounts will be issued.

THE WAR IN SOUTH AFRICA.

THE last fortnight has been a time of gloom and anxiety for the nation, for the tidings from the theatre of war in South Africa have been very depressing and each, if anything, more disappointing than the last. The only bright spots have been the splendid courage of our soldiers, the fortitude with which the nation is bearing its trial, and the self-sacrificing heroism displayed by medical officers on the battle-field and in the war hospitals. The devotion of the medical officers to their duties under the trying circumstances which they have had to encounter and the good work performed by the medical service generally have naturally given rise to a feeling of special satisfaction and pride in the medical profession, and have evoked outside the profession, we are glad to notice, general expressions of recognition. Never before has greater forethought been exercised in providing for the wants of the sick and wounded, and never apparently has the administration of a hospital service in the field been better conducted or the zeal and attention of all connected with it been surpassed. Some medical officers have already paid the tribute of their lives in the performance of their war duties and others have been wounded. To cite one instance in illustration of what has, we believe, always been the case we may quote the words of the special correspondent of the *Times* as to what took place at the battle of Magersfontein (one of Lord Methuen's engagements with the Boers). "The work of the medical staff was beyond praise. Their promptness in relieving and removing the wounded under hot fire was extraordinary, though the doctors were ultimately compelled to forego attending the wounded near the trenches as many men who might otherwise have been saved were shot while being attended to, the enemy's fire being always drawn to those points." Nor is this testimony confined to one occasion or to a single journal.

The supplies of everything have been framed and furnished on an ample scale for the South African expedition and the war hospitals there have been equipped and provided for with promptitude. The medical staff from top to bottom have wisely thrown everything open to observation and inspection, and frankly invited attention to all that is done or being done by them in aid of the sick and wounded, so that we may safely assume that no essential points open to just criticism have been omitted or overlooked. As civilian hospital surgeons of eminence, accustomed to what an injured or wounded man requires are present in the field we may regard their judgment as to the requirements of surgical science as that of a special jury in such matters, and we have heard of no complaints; on the contrary, their verdict has been highly favourable in respect of all that they have seen. The Army Medical Service could desire no better judges of their difficulties and their work, and the public may consequently feel assured that all that is practicable is being done for the welfare of the soldier under the circumstances of war. Had it been the case that eminent hospital surgeons had been present in some previous campaigns we might have heard much less of complaints on the part of many self-constituted authorities who, knowing nothing really of the actual conditions, were not content to rest satisfied with results, even where these were so exceptionally good as to be at the time almost unique in war.

As regards the more political and military aspects of the campaign we may perhaps claim to say a few words. Most people will feel inclined to agree with what Mr. Asquith said the other day in a speech at Willington Quay, that it would be idle to deny that there are many points in the preparation, the organisation, and the strategy of the campaign, which have excited widespread disquietude and which ultimately must become the subjects of searching inquiry. But in such matters nothing can be more unjust than to give publicity and currency to hasty impressions founded upon imperfect information. There is no concealing the fact that the nation has read the news of repeated failures or of fights with barren results with some feeling of consternation. What we have to do is to defeat a great conspiracy and rebellion which has been hatching for a long time. But no one seems to have taken any official cognisance of all that had been going on for many years past on the part of the South African Republics to prepare for a war which it was prophesied would surely come and which the Boer ultimatum made inevitable, although it must have been well known at the Cape that large sums of money were being spent year after year by the Transvaal Government in adding to their armaments and warlike stores. Nor apparently did any official knowledge exist of the probable number of men it could bring into the field; the consequence has been that we were unprepared and bound to be outnumbered when the sudden declaration of war came. A similar ignorance or defective information in regard to the strength of the Boer troops and their movements and tactics in the field seems to have prevailed throughout. The present situation of the British forces in South Africa is, to say the least, a very exceptional and unsatisfactory one, and it is clear that the Government and military authorities at home are now fully alive to the fact from the strenuous efforts that are being made. As we have said, we are opposed on principle to indulging in any amateur or carping criticism, still the apparent neglect—we say apparent, for all our information has, perforce, to be based upon results and that obtained from telegrams official and otherwise—of precautionary measures in the way of elementary tactics and scouting, for example, naturally excites astonishment and misgiving. It may be that these are capable of satisfactory explanation, of course, but for the present the public has to feed its curiosity upon mere conjectures. The condition in which our generals found matters in South Africa on their arrival may have left them no option but to relieve the beleaguered garrisons and divide their forces instead of concentrating them in pursuit of a definite strategic aim and scheme. To "the man in the street" it seems futile to go on hurling infantry battalions and sacrificing brave troops in attempts at attacking a numerically stronger force completely concealed in entrenchments. For the sort of warfare as at present carried on by the Boers it seems to the non-military mind that an overwhelming number of good horsemen and good rifle-shots capable of acting as a rough-and-ready kind of mounted infantry with a big artillery force would be best adapted to deal with the Boers.

Be all this as it may, however, we may say that it is impossible to withhold our admiration for the patriotism and pluck displayed by a man of Lord Roberts's age in going out in supreme military command of our troops in South Africa, especially under the circumstances of his recent bereavement. In a father's grief at the loss of a brave son it must be some satisfaction to know that Lieutenant Roberts met his death as a soldier and that he had the best surgical aid available, that of Sir William Mac Cormac, to whose very interesting notes, descriptive of his observations and experience, and to other communications from the seat of war, which appear in this issue of THE LANCET, we would call our readers' attention.

It is very satisfactory to learn that the wounded—the number of whom must by this time be considerable—are doing well and that they and the sick in hospital are receiving every possible care and attention. As we have already pointed out the casualties among the troops who have been actually engaged and upon whom the brunt of the fighting has fallen have been large, but the ratio of these calculated on the total force in the field is nevertheless not a high one. From a military point of view the number of men shut up in besieged garrisons and missing has, however, also to be taken into account. We much regret to learn that the sick-list in Ladysmith is mounting up, although this does not surprise us for we long ago stated that an outbreak of enteric fever and dysentery was to be feared at this season at Ladysmith.

As we cannot speak from any personal knowledge of the

facts connected with the alleged condition of the women and children disembarked at Southampton from the steamship *Jelunga* we are unable to make any useful comment thereon beyond expressing our great regret and sympathy with these unfortunate people if their condition was as pitiable as stated. No doubt their hurried embarkation at the Cape under exceptionally adverse conditions must have entailed a good deal of discomfort and even hardship, but it is clearly opposed to the intention of the nation that the wives and families of our soldiers should be subjected to any discomfort that can be avoided. Every possible care should obviously be taken to provide them with warm clothing and suitable food and to arrange for their comfortable railway transit to their destinations. In the case of the *Sumatra*, however, we feel bound to say—on the authority of Dr. Goring (the surgeon in charge of the troops) and others—that every care was taken and that any allegations to the contrary are, as a matter of fact, unfounded.

It has been arranged, we may add, that a certain number of beds at the branch hospital at the Victoria and Albert Docks are to be placed at the disposal of the War Office for the reception of sick and wounded soldiers who, on arrival, may not be fit at once to travel further. This hospital immediately adjoins the wharves where transports from the Cape arrive.

The nation has, very properly in our opinion, complete confidence in Sir Redvers Buller's undoubted ability, resolution, and military experience, nor does it show any signs of wavering in carrying out its purpose—quite the contrary. The task that has been thrust upon it is no doubt a bigger one than was generally anticipated, but not greater or more difficult than we and other nations have previously and successfully undertaken. We do not know the extent of the Boer losses; they must be very great. It may be safely said that it will not be for lack of "staying power" and fortitude on the part of the British nation that ultimate success will not follow unless the nation belies its history in the past. Our profession has meanwhile in any case to persevere in doing its level best in alleviating the sufferings of soldiers of whom any nation might well be proud. The War Office has issued a circular pointing out that there is urgent need for compounders of medicine to serve in South Africa.

NOTES FROM SIR WILLIAM MACCORMAC.

WE have received the following interesting communication from Sir William MacCormac.

On Nov. 21st in company with Colonel Stevenson, principal medical officer on the lines of communication, and Mr. Makins I visited the No. 1 General Hospital at Wynberg some seven or eight miles from Cape Town. As a brief description of what I saw may prove of interest I send you these somewhat scanty notes.

The hospital is pitched upon the location of a former barrack, and is on the sloping ground of the south-eastern side of Table Mountain and overlooking a wide expanse of country. The soil is white sand and there are abundant trees—oaks and pines chiefly. The situation is an ideal one, and the climate is excellent. However hot it may be in Cape Town there is always here a a pleasant breeze to temper the air. It is near the celebrated Constantia vineyards and the country around is quite beautiful. The wards are in part in the permanent buildings, but mainly in wooden and iron huts. They contain 14, 16, and one or two 20 beds in each, are lighted by large windows by day, and by the electric light at night. The sanitary arrangements are very complete and each ward has the usual bath, lavatory, and other conveniences. There is a free cross ventilation. The wards are gay with spring flowers on the tables and at the bedsides, and in that as in many other ways one can see the delightful evidence of woman's presence. There are at Wynberg four army nurses, bright, charming ladies, all of them. One of them smilingly told me there was simply nothing that she could not have for the patients for the asking and the townspeople are profuse in their gifts of every kind for the comfort and pleasure of the patients. This hospital, like all hospitals at the base, is fitted to receive 520 sick and wounded and 300 beds have already been filled with wounded from the earlier battles of Glencoe, Dundee, and Elandslaagte. These are all convalescent, but others will speedily arrive after the heavy fighting of Lord Methuen's column at Belmont on Nov. 23rd and since on its way to relieve Kimberley. However, very shortly further accommodation will be ready as No. 2 base hospital is being rapidly pushed forward on a site adjacent to No. 1. An operating theatre has been built of iron and wood and with every convenience as to its installation. It is well lighted, the walls inside are painted with white enamel paint, and the floor is of marble squares sloping to one corner. The furniture is of the well-known glass and iron type, and there are instrument cases, glass tables, sterilised hot and cold water to basins and sinks, with pedal taps, abundance of antiseptic material for dressings—everything in short which the exigencies of modern antiseptic operative treatment demands. It is, therefore, no exaggeration to say that for practical uses this operating theatre will compare favourably with any one anywhere.

An x ray room has also been built. It is fitted with the most modern apparatus and the electricity is supplied from the main instead of from an accumulator. They have got a Mackenzie Davidson localising apparatus for determining the depth from the surface and exact position of a foreign body. I found Mr. Fox Symons, one of my old dressers, doing excellent work in this department. Colonel Anthonisz, R.A.M.C., is in charge of the hospital which possesses the full number of surgeons and staff allotted to one of this description. In this ward I saw a large number of injuries inflicted by the Mauser bullet which is remarkable for the small external wound it produces. In three-fourths, if not even a larger proportion, it was impossible to tell the exit from the entrance wound, they were so similar in appearance. Some were quite healed, but most were slits covered with an adherent black scab slightly depressed and saucer-like. Doubtless some contraction had taken place in healing, but the size was as nearly as possible as here indicated— —quite circular and much smaller than the end of a lead pencil. A few exit wounds were slits due to slight deflection of the bullets in their passage. These were already healed like an incised wound and showed a linear cicatrix of about this length ———. Probably most of these injuries were inflicted at a range of 1000 yards, although the men said 500 was the distance in very many instances at which they had been hit. One man, a Gordon Highlander, had his elbow smashed up into small pieces. He believed it was an explosive bullet, but it may have been a Mauser at short range, for he was hit at a distance of 300 yards. The Boers, however, use other, weapons. A Martini-Henry bullet was removed from the ball of a man's thumb yesterday—an almost solitary example of a lodged bullet. They also fire hollow bullets which would have explosive effects. The Mauser bullet weighs, I believe, about 2·3 grains. Our Lee-Metford is a little heavier, about 2·7 grains, and does not carry so far by some hundreds of yards; while the old Martini-Henry is nearly double in weight, or some 4 0 grains. In the wards I noticed quite a number of perforating chest wounds and some remarkable perforations of bone without any solution of continuity or complete fracture; in one instance there was a perforation of the shaft of the tibia at the junction of the upper with the middle third of the bone, an injury which my previous experience would pronounce quite impossible.

There were several cases in which the bullet had entered the groin and emerged through the central portion of the buttock, the direction taken making it difficult to conceive how the femoral vessels, the sciatic nerve and artery, the femur, and other important parts had escaped all injury. There were four abdominal injuries. In two severe hæmaturia followed and the direction of the wound suggested injury to the bladder. In another the bullet entered the buttock and emerged in front a little below the ribs. In a third instance the abdomen was traversed in a similar direction. There were hæmatemesis and bloody stools for three days without any further symptoms. In another case the bullet apparently traversed the abdomen from the right linea semilunaris in front at a point a little above the level of the umbilicus to emerge two inches to the right of the lumbar spine. There were no symptoms in this case of any kind.

I will mention in the briefest way some of the cases I saw during my visit to the hospital at Wynberg.

1. Bullet entered chest on left side close to margin of sternum, just below the sixth rib. It must have passed between the internal mammary artery and the bone near its

division, the ball then traversed the lung and emerged at the tenth rib about four inches from the spinal column; rapid convalescence—practically no symptoms; wounded on Oct. 21st.

2. Bullet entered just below inferior angle of right scapula, between seventh and eighth ribs probably, and emerged just below centre of right clavicle; result, similar to case 1.

3. Bullet entered opposite centre of infra spinous fossa of right scapula, emerged through rib in front three inches below middle of right clavicle. Man had hæmoptysis for a week; no dyspnœa or other symptoms.

4. Bullet entered level of fourth dorsal vertebra about two inches from spine on right side, emerged two inches below centre of right clavicle. Man spat blood for a week, says he felt no inconvenience otherwise.

5. Perforating wound of surgical neck of left humerus with some detached fragments. Skiagram shows extent of damage clearly. The fragments were removed; patient convalescent.

6. Wound across knee; bullet entered one and a half inches behind, and on level of head of right fibula, emerged on inner side opposite middle of internal condyle. Wounds healed; joint mobile.

7. Bullet entered anterior aspect of thigh two inches above upper border of patella and in the middle line, emerged over the inner tuberosity of the tibia, which appeared to be grooved by it. Wounds healed, joint mobile, yet it is difficult to suppose the joint escaped.

8. Bullet entered middle of outer side of right knee and emerged through centre of patella, causing a complete transverse fracture with about a quarter of an inch separation. The wounds had healed and the man had been able to get about, but on the previous day he had fallen and had hurt the injured knee, which caused a great deal of swelling. There is no rise of temperature and he is doing well. The joint is fairly moveable. This man is a Boer field cornet, Pretorius by name. He is a fine-looking man, with a cheery, pleasant face, and speaks English perfectly.

9. Bullet entered opposite centre of patella through which it passed and emerged opposite inner condyle which was grooved by the ball. All evidence, save the scars of entrance and exit wounds, had disappeared and the knee was apparently as good as ever.

10. Scar of entrance wound immediately over the right femoral artery and two inches below Poupart's ligament. The artery can be felt pulsating exactly beneath it. The bullet then passed apparently inside the upper end of the femur without impairing the bone and emerged just posterior to the great trochanter.

11. Bullet entered in front of, and an inch below the top of, the great trochanter, which it grooved and emerged through the middle of the buttock.

12. Bullet entered anterior surface of thigh at junction of middle and upper thirds and passing internally to the femur emerged through the centre of the buttock. In none of these three last cases had any important structure been damaged, and the wounds were either completely healed or were still covered with the small black scab already mentioned.

13. In this case the man was wounded on Oct. 21st, and operated upon by Colonel Stevenson 24 days afterwards in the base hospital—viz., on Nov. 14th. He was doing quite well when I saw him, and three days later I heard he was practically quite well. The bullet entered from behind two inches below the fold of the axilla and emerged in front just beneath the anterior axillary fold. When Colonel Stevenson saw him he diagnosed a damaged artery from the gradually increasing tense swelling and absence of radial pulse. He made an incision, which had subsequently to be enlarged to five inches, and after turning out nearly a pint of dark clotted blood found a large breach in the vessel where the axillary becomes brachial. When the final portions of clot were removed a formidable rush of arterial blood occurred, but this was immediately controlled and both ends of the vessel were securely ligatured. When I saw the man a week exactly after the operation the external wound had healed except where the drainage-tube emerged. The temperature was normal and the general condition excellent. The wound was not quite aseptic from the start but all went well. There was when I examined him no perceptible radial pulse.

14. One man had four wounds in the upper extremities caused by the same bullet. It entered the arm on the outer side two inches above the elbow-joint and emerged two inches below, and then entered the ball of the thumb, smashed the metacarpo-phalangeal-joint, and finally emerged over the first phalanx.

15. Bullet entered subcutaneous surface of tibia, a little below the junction of upper with middle thirds of the shaft of that bone. There was a clean cut perforation through the tibia but no general fracture or solution of continuity, which is very remarkable in the compact tissue. This man says he was hit at 500 yards, but more probably it was 1000.

16. Bullet passed transversely across forehead about an inch above the level of the orbits; the bone is deeply grooved and along the upper margin there is an elevated fracture parallel to the groove. The man describes himself as being "knocked silly" for a time and there was a temporary diplopia, but the wounds at each side of the forehead are healed and he claims to be perfectly well.

17. Bullet entered right malar bone close to its junction with zygomatic process, passed almost transversely across, and emerged just above the centre of the left zygomatic arch which it grooved. There was copious bleeding from the mouth and the left ear in which the patient is now deaf. He complained of loss of smell for a time but this is restored. He is going about the ward the wounds quite healed and says he is perfectly fit and well. This man was wounded on Oct. 30th, distance said to be 250 yards.

The officers' wards have been installed in the buildings which served for officers' mess rooms in the old barracks. The mess room is a ward; the ante-room a day room. They are admirably fitted for their purpose, equipped with every care and one might almost add every luxury possible under such conditions. Most of the wounded officers have been discharged and the nine or ten remaining are convalescent. Captain Melville received a gunshot fracture of the right humerus on Oct. 21st. The fracture is soundly united with super-abundant callus and there are signs of interference with the musculo-spiral nerve. In Captain Steyner the bullet passed through the left olecranon process and emerged on the outer side of the forearm opposite the head of the radius. There is already a fair amount of mobility in the joint, which is steadily increasing. In Lieutenant Barnes the bullet entered the groin and emerged through the central part of buttock without causing any serious damage. Lieutenant Perreau had a perforating gunshot wound of tibia, and in Captain Buchanan's case a bullet entered one and a half inches below and external to the right nipple and emerged behind, apparently between the ends of the tenth and eleventh ribs. There were no symptoms of visceral injury and it is supposed from this that there could have been none. I would say, in conclusion, that in my opinion it would be very difficult, if not impossible, to procure better treatment in any hospital than the patients in Wynberg Base Hospital are receiving under climatic and sanitary conditions extremely favourable in every respect for a successful issue. The hospital in its arrangements, construction, and situation reflects the greatest credit on all concerned.

The references to the cases are of necessity very brief, but will, I hope, be sufficiently explanatory of the nature of the injuries, which will be, of course, fully reported later. I am writing this letter on my way from the Cape to Natal in a ship which is rolling heavily. I hope to reach Durban, 1000 miles off, in a few days, and thence make my way to Maritzburg and Ladysmith, where there must be many sick and wounded. I shall also have an opportunity, I hope, of inspecting the hospital ship now lying at Durban. It is perfectly clear that never before was an expedition more abundantly and generously equipped with every resource which the medical authorities can suggest for the welfare of the sick and wounded.

On Wedesday, Nov. 22nd, I had an opportunity in company with Colonel J. F. Supple, R.A.M.C. (who designed it), of visiting the hospital train No. II. I had heard it was going up to the front next day with the surgeon-general and principal medical officer and that Mr. Makins would go with them. However, while I was in the train an urgent order came that it was to leave in two hours' time in consequence of a telegram coming from Lord Methuen's force that it was immediately required, and leave it did. It consists of seven waggons made from converted saloon carriages, open at each end, and allowing a passage way from one end of the train to the other. Each waggon or coach contains 12 beds for wounded and sick; each bed is seven feet long and placed endwise in three tiers. The officers' carriage has four beds. The beds have three-inch hair mattresses on

canvas stretchers and are most comfortable to lie upon. At each end the upright by a simple arrangement can be taken down, thus admitting of easy access to the bed from the stretcher. A few are fitted as fracture beds. At each bed on the wall of the carriage is a small double bracket which carries the man's eating utensils and odds and ends and a bed-table has been provided for each bed by Colonel Young, agent for the Red Cross Society.

There is a kitchen-waggon with an excellent stove, a pharmacy waggon, day and night accommodation for the two army service sisters and three surgeons who accompany the train and for the 17 army hospital corps men and the rest of the *personnel*, cooks, and servants. There is store-room for kits and rifles, a water-closet at each end of the waggon, and pails containing antiseptic material for flushing, ladders to reach the upper cots, ample ice provision and arrangements for good lighting at night, and "mussuks," which are water jars covered with a soft thick material. This is wetted and when hung outside cools the water in the jar. The train was made up in Cape Town, Colonel Supple having almost to seize or capture the railway waggons from unwilling authorities. Under his superintendence it was got ready in a very short time and will, I believe, prove most comfortable and most effective. The Cape railway gauge is only three feet six inches and the carriages much less spacious than ours are in consequence. Another hospital train is almost ready.

Nov. 25th, 1899. WILLIAM MAC CORMAC.

(FROM OUR WAR CORRESPONDENT.)

Thankfully accepting the cordial invitation to which I alluded last week I lost no time in proceeding to No. 1 General Hospital, which I found at or adjacent to Wynberg, a scattered township nine miles distant from Cape Town.

The ground on which the hospital lies is some 250 feet above sea-level, and it is very wisely selected, for this military medical camp lies nearly N.W. of Wynberg railway station, but facing W.S.W. by E.N.E. as far as the hospital erections are concerned (*vide* plan in THE LANCET of Dec. 16th, p. 1690).

Wynberg, a very pretty place consisting of a main street with good shops, together with several imposing, nicely built, private residences, nestles amongst gigantic oaks, lofty pines, eucalypti, and other stately trees, all growing in luxuriant profusion at the base of Simon's Bay side of Table Mountain. It is about 150 feet above sea-level and has a scattered population of some 3000 souls, its mean annual maximum temperature being 72° F., its mean annual minimum 53·2°, and its mean annual rainfall, 42·33. Proceeding through Wynberg in a S.S.W. direction one ascends a sort of table land and on this higher ground the various dwellings of No. 1 and tents of No. 2 stationary hospitals are observed.

The site selected is the same as that chosen for the location of the old colonial station hospital which could only accommodate some 400 persons, whereas the present No. 1 General Hospital can receive 600 cases. Some of the more important buildings are of brick, but the majority are of wooden construction. The camp is supplied with an abundance of water, the supply being maintained by a large reservoir close by, which is guarded and protected by lock and key. Its source lies high up in one of the valleys of Table Mountain—the same spring, in fact, which supplies the whole of Cape Town. The water is soft and possesses a slight peaty taste, but appears otherwise to be pure and good.

THE DRAINAGE OF THE CAMP.

The drainage of the camp is of necessity superficial, the waste water, &c., being removed by 18-inch-deep cemented channels which course down by a natural fall to the filter-beds at the bottom of the rising ground on which the camp stands. It must be borne in mind that no human excreta are supposed to find their way into these channels, the various latrines, being conducted on the earth-closet system and their contents daily removed under suitable and efficient disinfecting arrangements. For ablutionary purposes each man gets half-a-gallon of water at a time. Even the dirty water is removed daily by means of large metal barrels run on wheels so as to obviate the risk and danger of the earth being tainted by persons carelessly throwing down any soiled water in or around the tenements occupied by the wounded or sick in this camp.

THE FEEDING OF THE WOUNDED AND SICK.

All that need be said about this most important point is that they are one and all liberally supplied with the most nutritious assortment of food-stuffs that Cape Town and the surrounding country districts can procure and produce. Excellently grown vegetables, ripe fruit, splendid strawberries, fresh eggs, and flowers in abundance are sent daily to our wounded soldiers as presents by kind and generous civilian friends and neighbours.

TOMMY ATKINS AT THE FRONT

would of course be nowhere without his baccy. At the hospital you may professionally treat him well, feed him well, but deprive him of his "weed" and he is nowhere. With admirable forethought even this desideratum has been arranged for by the authorities as well as by sympathising friends from near and far. Colonel Anthonisz, R.A.M.C., the officer in charge of No. 1 Stationary Hospital, pointed out cupboards full of, and shelves packed with, tins of tobacco and cases of cigarettes, sent to him for the use of the patients under his care (*vide* enclosed cutting from one of the local papers).[1] One kind donor sent him £30 to procure suitable wicker chairs for verandah use, increasing his liberal donation afterwards by an additional cheque for another £10 for similar use. So readers at home may rest assured that their wounded friends are being well cared for.

THE STAFF OF NO. 1 GENERAL HOSPITAL

consists of (1) Surgeon-General W. D. Wilson, R.A.M.C.; (2) Colonel A. Anthonisz, R.A.M.C., in charge of No. 1 Hospital; (3) Colonel H. Grier, R.A.M.C., registrar and secretary; (4) Colonel R. D. Hodson, R.A.M.C., in care of surgical wards; (5) Major R. W. Barnes, R.A.M.C., in care of medical wards and wounded Boer prisoners; (6) Major R. W. E. H. Nicholson, R.A.M.C., analytical department; (7) Major F. D. Elderton, R.A.M.C.; civilian medical men; and Colonel Stevenson, Professor of Military Surgery at Netley. Besides these there are Miss Garriock in charge and as superintendent with nine other sisters on the nursing staff, and minor officials numbering 166 all told, not including the nurses.

THE OFFICERS' SICK QUARTERS

were first of all visited. I found a spacious, lofty, well-built, wooden, galvanised iron-roofed building protected by a broad verandah running the whole length of its northern frontage (see illustration). On entering a spacious hall one observes right and left two large rooms. These are used as the officers' wards. They are some 17 feet high in the centre and about 10 feet at the sides, lined with perpendicular slabs of polished pitch-pine, with a dado running round stained of a much darker colour. Down the centre of each apartment are four tables covered with green baize on which are placed vases of flowers, inkstand, and writing materials. Both rooms were supplied with fire-stoves in which cheerful-looking fires were burning at the time of my visit. Light is supplied at night by electric incandescent burners with globes. Each ward is supplied with 10 iron cots. Three or four in each were occupied when I saw them, most of the patients being up writing letters or smoking pipes seated on easy chairs in the verandah. In these wards when seeing the invalids Surgeon-General Wilson particularly called the sick officers' attention to the fact that they should not consider themselves as patients restricted to this or that fast rule so common in hospitals, but as military convalescents, feeling themselves at liberty to ask for anything in reason—change in diet, &c.—making the request through Miss Garriock, and their respective wishes would, he was quite sure, be complied with.

THE MEN'S MEDICAL AND SURGICAL WARDS.

Occupying the latter are several wounded soldiers, most of them quite convalescent. All seem happy and quite contented, whilst the majority bear the impress of excellent health. Of course some are yet confined to bed, but one fails to notice any case that could possibly be designated as dangerous or even doubtful. As would be imagined, the cases are nearly all gunshot ones, only two or three

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[1] "The officer in charge No. 1 General Hospital, Wynberg, continues to receive daily quantities of various articles for the use of the sick and wounded, by whom they are much appreciated. Owing to the large number of donors it is impossible to thank each by letter. It is therefore hoped that this acknowledgement in the press will be considered sufficient, at least for the present."

being probably caused by shell. The very first thing that strikes any observer is the absence of extensive flesh wounds. When the patient shows you where he has been shot he points out in the front of his leg or arm, a clean well-defined small circular cicatrix as the spot where the Mauser bullet went in, and another wound like this at the place where it went out. Of the very many Mauser wounded cases I saw, not one presented a more lacerated condition of the integuments than I have endeavoured to describe above. This slender elongated bullet produces a canal not much, if anything, larger than a good sized goose-quill, and bores its way through as neatly as if the hole had been done by a drill. Leaving no very ragged edges the wound, if soon treated antiseptically, heals very rapidly and by lessened destruction of soft parts and infrequent fracture of bone there must result less shock to the system at the time the injury is received, and less chance of local disturbance and septic mischief afterwards. By careful antiseptic treatment (carbolic and mercuric solutions) all these gunshot wounds heal in about from 20 to 30 days. There has only been one case of amputation (major) performed in No. 1 base hospital up to the date of writing this. One man had his left arm removed on account of the humerus being badly shattered by a sporting rifle using a larger bullet than the Mauser. He was discharged cured the day before yesterday and will be sent home. There are some very interesting cases of gunshot wounds to which reference will be made in a future article. For the privilege of seeing all the wounded Boers I am indebted to the courtesy of Major R. W. Barnes, R.A.M.C., who, having placed them in a separate ward amongst our men's sick quarters, is bestowing upon our wounded enemies all the care and attention that human sympathy and fellow-feeling can demand.

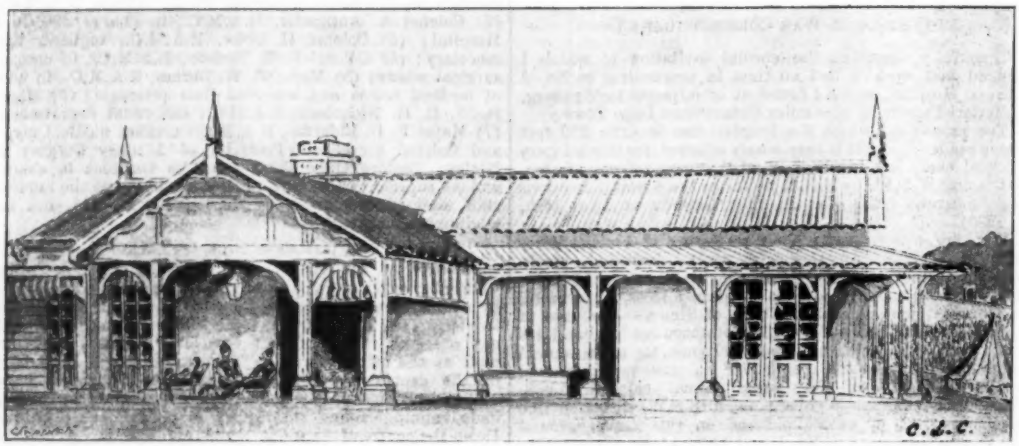
I asked Commandant Pretorius (seriously wounded) if "he felt fairly comfortable under the circumstances and was receiving all the attention he expected at the hands of the military medical staff." "Yes," replied he, "they are treating myself and all my wounded friends splendidly." He has a bad wound in his left knee, a broken patella, and three other flesh wounds.

Poor Knight of the *Morning Post* has just been brought to hospital with his arm badly shattered by a bullet.

Wynberg, Nov. 24th.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

This morning (26th) brought us the first consignment of wounded from the battle of Belmont. They were sent down at once from the Orange River by special ambulance train and numbered 102 sick and wounded men and 18 officers. They had a very comfortable trip down but unfortunately one officer died just before the train reached Wynberg and three poor chaps died almost immediately after reaching hospital; amongst them were 80 odd cot cases nearly all of whom were seriously injured. From what I can see and gather from the patients the Boers in this engagement used all sorts and conditions of weapons, and there is little doubt from the nature of some of the wounds and the extensive laceration of muscle and smashing of bone that bullets of far larger calibre than the Mauser were used. In the case of the correspondent of the *Morning Post*, the wound was undoubtedly caused by a Martini-Henry bullet, the smashing of the shaft of the humerus being very severe. The same remarks apply to several other cases, amongst both officers and men. At present, with a few exceptions, all are going on well and are already benefiting by the careful nursing and bracing atmosphere. We are expecting both ambulance trains down from the front hourly with officers and men wounded in the last engagements which from newspaper reports appear to have been very severe. I need hardly say that our work has been very heavy, and very little time is left us for writing, so you must trust this week to those who have more leisure than I have. No. 2 General Hospital is nearly ready to receive patients and none too soon as we shall be full up in a few days. The *Orient* is taking home invalided officers and men, the majority of whom will be unfit for further work in this campaign. Everything is working with the greatest smoothness, and the patients have everything they can desire, what we cannot get from official sources being supplied with a liberal hand by the Red Cross Society and the many friends we have in the neighbourhood. Nearly all the transports are out, and we expect engagements daily now, but you get all war news long before it reaches us.



No. 1 Station Hospital, Wynberg. The officers' sick quarters.

Amongst the wounded officers are the following cases:—(1) Compound comminuted fracture of the right humerus (Martini-Henry); (2) perforating gunshot wound on the left side of the neck, passing through the muscular structures and exit outside and above the right scapula (Mauser); (3) perforating wound of the ankle, the joint not affected (Mauser); (4) perforating gunshot wound of the lower lip, grazing right inferior maxilla and exit at the back of the neck (Mauser); (5) gunshot wound of the right lung (Mauser); (6) gunshot wound of the chest walls (Martini-Henry); (7) compound comminuted fracture of the left forearm, the bullet passing afterwards through the muscles of the back and emerging close to the spinal column (Martini-Henry); (8) gunshot wound on the dorsum of the right foot (Mauser); (9) compound fracture of the right femur (Mauser); (10) compound comminuted fracture of the right humerus below the surgical neck, the bone being shattered (Martini-Henry); and (11) perforating wound of the tibia, both bones being shattered (Mauser).

The poor young officer, Lieutenant Burton of the Coldstream Guards, who died, was shot through the hea The remainder are not serious and all are progressing as can be expected save 7, 10, and 11.

We have been operating for the past three day

the cases including several trephinings for depressed fractures of the skull and amputations for extensive injuries to the long bones of the thigh and leg, one or two enucleations of the eye have been also necessary. Conservative surgery is, of course, as far as possible the order of the day and the marvellous manner in which some of the worst-looking cases get on encourages us to give them every chance. The ambulance train from the last action at Gras Pan is on the way down as I write, bringing seven wounded officers, including two naval and one marine, and 60 odd rank and file, principally naval details. The hospital ship *Spartan* is also expected here shortly with wounded from the Natal side, so that you may imagine we are kept at it. Later, when the advance on Kimberley and the relief of that town is accomplished, our number will, I am afraid, be largely augmented, but there need be no apprehension as to the accommodation as up to the present No. 2 hospital has received no patients and we have ample room here for as many as are likely to come for the present. Of course, we are emptying the hospitals of slight cases and those not likely to be fit for duty within two months who, as I stated before, are being sent to England.

Whilst I am about it I should like to say how excellently the young civil surgeons attached to us are doing their work. Nothing in the shape of work is too much for them, and their willingness and zeal are of the highest order. Of their medical and surgical skill I cannot speak too highly, and the care exercised in their selection is bearing its fruit, for a better lot of men all round I have never had the pleasure of meeting or serving with. I only hope that after this war is over we may be fortunate enough to enlist the majority as officers of the Royal Army Medical Corps. They are of the stamp we need badly and are a credit to their schools.

Wynberg, Nov. 28th.

THE PRINCESS CHRISTIAN HOSPITAL TRAIN.

On Dec. 20th H.R.H. Princess Christian paid a visit to the works of the Birmingham Railway Carriage and Wagon Company of Smethwick to inspect the new hospital train which bears her name. A minute examination of the details was made and illustrations were given by the St. John ambulance men in charge of the train of the practical working of the various appliances for the help and comfort of the wounded in war. At the conclusion the Princess expressed herself as being highly pleased with the arrangements and the admirable manner in which the plan had been carried out. Great credit is due to the company for the complete and thorough character of the work and for the rapidity with which it has been done; barely ten weeks have elapsed since a commencement was made, the workmen and officials all having worked with much enthusiasm towards the attainment of the object. The train was designed by Sir John Furley for the Central Committee of the British Red Cross Society. It consists of seven bogie carriages with a central corridor running the entire length of the train. The carriages measure each about 36 feet in length with a gauge of three feet six inches.

The carriages are divided into three compartments. The first one contains in the front receptacles for linen and other stores, the next space for two invalid officers, and the rear one for two nurses. The second carriage is also divided into three parts for dining room, surgery, and space for two medical officers respectively. Four succeeding carriages contain beds for 18 invalids in each, and room for four orderlies, the beds ranging in tiers of three running parallel all along the length of the train. Pulleys are attached to the roof of these carriages and by a simple contrivance the beds can be hoisted into their places by one man and easily run like shelves into their positions. A lavatory, a closet, store-cupboards, and lockers are fixed in each. At the end of the train are the kitchen, pantry, cooking appliances, with berths for two cooks, and the middle space for the guard. Here is to be found every modern adjunct for the required purpose—cisterns for water fixed in the roof, an ice-chest, a large filter, and convenient apparatus of all kinds specially adapted for all contingencies; indeed, all throughout, every available space is fully and ingeniously occupied. The interior is painted white, with beams running across; the external surface is of varnished teak, while externally an awning can be fixed for protection from sun and rain. At the head of the train floats the Red Cross flag by the side of the Union Jack. Throughout the aspect is bright and cheerful and suggestive of every comfort and facility for the intended purpose. It may be mentioned that the cost of the train is borne by the borough of Windsor, which contributed £6100. To this were added a sum of £650, the balance of a Red Cross fund invested in Her Royal Highness's name after the Soudan campaign of 1885, a donation of £200 from the Worcester committee, and £50 from Canada. The construction is evidently costly, but when viewed from a humanitarian standpoint and considering the intricacies of the design and work it cannot be said to cost more than it is actually worth in the interests of the wounded and suffering.

THE HOSPITAL SHIP, *Maine*.

The ladies of America, as our readers know, have presented us with a fully equipped hospital ship and on Saturday last the Duke and Duchess of Connaught, who were accompanied by the Marchioness of Lorne, visited the *Maine* at the West India Docks in order that his Royal Highness might publicly present in the Queen's name a Union Jack to the ship. The ceremony took place in the presence of the Lord Chancellor, Lord Charles Beresford, Lord and Lady Essex, Sir Arthur Sullivan, General H. F. Eaton, Captain F. Stone, Surgeon-Lieutenant-Colonel Hensman, A.M.S., in military command, Surgeon-Major Cabell, Commander J. M. Caulfield, R.N., the Duchess of Marlborough, the Countess of Strafford, Mrs. Hugh Reid Griffen, Mrs. Blow, Mrs. Leslie, Mrs. Moreton Frewen, Mrs. T. L. Field, Mrs. Morgan Richards, Mrs. Haldemann, Mrs. Ronalds, Miss Hibbard, superintendent of nursing corps, Mrs. Brown Potter, and others.

The DUKE of CONNAUGHT, in presenting the flag, said that he did so in the name of her Majesty the Queen, as a mark of her appreciation of the generosity of those who had found the money for the ship, and also as a mark of her appreciation of that charity which a large number of American ladies and gentlemen had shown towards the soldiers of their kin, speaking their own language, who were now fighting gallantly in South Africa. Never before had a ship sailed under the combined flags of the Union Jack and the Stars and Stripes; and it marked an occasion which brought out the feeling of generosity and affection that the two countries have for each other.

LADY RANDOLPH CHURCHILL replied, thanking his Royal Highness in the name of her committee for his kindness in presenting on behalf of Her Majesty the Queen her gracious gift of the Union Jack to the American ladies' hospital ship *Maine*. Her committee had had many donations from English people, who had come forward most lavishly with their gifts. Indeed, all who had been interested in the work had made it a labour of love. She hoped that the *Maine* would be more than useful on her errand of mercy, and that American charity would be as widespread as possible, irrespectively of nationality.

The Right Rev. CHARLES HENRY TURNER, Bishop of Islington, having blessed the Queen's gift, which measures some 24 feet by 12 feet and has emblazoned in the centre a large red cross, the flag was unfurled and hoisted to the mainmast, the Stars and Stripes were placed at the mizzen, and the Red Cross flag on the foremast. Enthusiastic cheers followed these operations while the band of the Scots Guards played "Rule Britannia."

In the evening a banquet took place at the Carlton Hotel which realised about £2000.

Provision is afforded on the *Maine* for nearly 220 patients (this provision can be extended if necessary), who will be distributed in five wards named respectively Britannia, Columbia, Whitelaw, Reid, and Baker. An isolation ward is also provided in case of need. There are also a perfectly fitted operating room and all other necessary offices and fittings. No efforts have been spared to secure to the unfortunate sufferers every possible comfort. On the main deck are the beds for patients arranged in rows, each being sheltered by sliding curtains, while ventilation is provided for by special overhead tubes. The chief saloon is luxuriously fitted.

The whole of the medical outfit has been supplied by Messrs. Burroughs, Wellcome, and Co. One of the medicine chests supplied by this firm is in tooled leather designed by Mr. Henry S. Wellcome. On the top panel appear the Union Jack and Stars and Stripes entwined, portraits of George Washington, Queen Victoria, and President McKinley, and representations of the American Eagle and British Lion.

The front panel bears portraits of Lady Randolph Churchill (president), Mrs. Ronalds (honorary treasurer), and Mrs. Blow (honorary secretary of the American Ladies' Hospital Ship Committee), a picture of the hospital ship *Maine*, a scene representing the British Lion wounded by an arrow (which lies broken at his side) being administered to by Britannia and Columbia—Columbia pouring a healing balm upon the wound whilst Britannia bandages the paw. A frieze is formed by a representation of American Indian Wampum upon which are depicted Brother Jonathan and John Bull grasping hands. The other panels bear equally suitable designs descriptive of the bond of union between the English and American peoples. Prominently inscribed on the chest are Keble's line, "No distance breaks the tie of blood," and Ambassador Bayard's notable phrase, "Our kin across the sea."

Surgeon-Lieutenant-Colonel Hensman, A.M.S., will represent the War Office on the *Maine*, while Surgeon-Major Cabell will direct the services of Dr. George Eugene Dodge, Dr. Harry H. Hodman, and Dr. Charles H. Weber.

FIXITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH.

A MATTER at present receiving considerable attention from medical officers of health and deserving even more attention from the general public is the question of fixity of tenure and superannuation for the above-named officials. Superannuation, not only for health officers, but for all officials engaged at a fixed salary in positions of trust, is desirable; fixity of tenure—by which is meant "undisturbed possession of office and emoluments, subject only to dismissal for approved reasons by the Local Government Board"—is for medical officers of health more than desirable, it is absolutely essential for the effectual fulfilment of their duties towards the best interests of the public. A casual observer is apt to consider this question of fixity of tenure as a matter affecting principally medical officers of health themselves. Such, however, is emphatically not the case; on the contrary, the greatest sufferers by the existing state of affairs, and those who have most to gain by reform, are the members of the general public; it is only incidentally that medical officers benefit by the reform. For nearly 30 years, ever since, in fact, appointments of medical officers of health have been made, the people have been robbed of the full benefit of the Public Health Acts by the sole circumstance that medical officers are liable to curtailment of salary or capricious dismissal by the members of their sanitary authority.

A moment's consideration will convince anyone that this must continue to be the case until fixity of tenure is granted. Take, for example, the composition of the ordinary sanitary authority—whether of a city, county borough, urban or rural district council—in every case its members are drawn from those who have the largest vested interests in the district or town as the case may be, they are possibly the greatest owners of property, the largest house agents, or the chiefs of the principal industries of the place. Sanitary reform unfortunately entails a certain amount of expenditure and will directly or indirectly affect to some extent the pockets of these men, the result of which is obvious. It is not an uncommon thing for a medical officer whilst endeavouring to have some insanitary property put in a proper state of repair to find that a quantity of it is owned by a member of the sanitary authority—i.e., by one of his masters, by one of the men who have absolute power to discharge him neck and crop without giving rhyme or reason for their action. Or suppose the medical officer is taking active steps to provide an abattoir he is at once at variance with the vested interests of the meat trade on the council; or suppose he agitates against the erection of insanitary dwellings he finds himself forthwith at loggerheads with the jerry-builder and his financiers, a class usually strongly represented on sanitary authorities. He points out defects in the water-supply and finds half his council suddenly cool to him, due, as soon dawns upon him, to the fact that half the members of the sanitary authority are shareholders in the local water company; and so on. Examples might be multiplied *ad nauseam*. Such occasions constantly occur in the experience of every medical officer of health, and there are then two courses open: the medical officer may either allow the matter in hand to be referred to committee and quietly shelved or he may make a firm stand for what he considers to be his duty to the community. Adopting the first course the health of the community suffers and the medical officer is restored to favour and possibly gratified by hearing flattering allusions to his tact and good sense; adopting the second the health of the community may still possibly be ignored, but one thing is very certain—the medical officer will, if the matter affects large interests, assuredly suffer. It reflects credit on medical officers of health as a class that so many prefer to suffer annoyance and risk loss of appointment rather than allow their sense of duty to be guided by expediency. That loss of appointment for mere performance of duty is no vague and remote risk is shown by the list of cases quoted by Dr. T. W. H. Garstang in his address delivered at the annual meeting of the Incorporated Society of Medical Officers of Health in October; from these cases we select those of three medical officers who were dismissed for advocating a new water-supply; of seven who were dismissed for advocating various sanitary reforms; of two dismissed for urging the provision of an isolation hospital; and lastly, of one medical officer of health dismissed, after several years' service, for interfering with the concealment of a case of small-pox in the house of the chairman of his authority!

Now medical officers of health are drawn from the same ranks as are other professional men; as a class they are not actuated by higher or by lower motives than others, and are not less prone or more prone than others to sacrifice themselves for conscience sake. What, then, must be the effect on the improvement of sanitation in the country from placing the chief of the sanitary administration in every district in such a situation that his duty puts him frequently face to face with two alternatives—one, performance of duty and loss of appointment, possibly starvation for himself and family, dismissed with the added stigma of having proved an incompetent officer; the other, neglect of duty and the knowledge that thereby his path will be in pleasant places, he will be on good terms with his councillors, and will find applications for increase of salary very favourably received? Is it, then, a matter for surprise that the benefits anticipated from the passing of the Public Health Acts have not been realised? Is it not, on the contrary, astonishing that any good at all should have been accomplished and that so many men have been found who have preferred to face loss of appointment rather than to allow their sense of duty to wait upon their personal enrichment?

These above-mentioned alternatives are not exaggerated. Every medical officer of health throughout the country has continually found that his popularity with the members of his sanitary authority has been increased or decreased according as his activity in sanitary reform has been slight or marked. A rural medical officer of health, a man of marked ability and a diplomate of public health, remarked recently, "Well, up to three years ago I took a great interest in public health, gave a lot of time to it and really worked hard to effect some much-needed sanitary reforms in my district—result, every year it was touch-and-go whether I were re-elected or not, consequently I decided to let the thing slide and now there is not a more popular official than myself; in fact, at the end of the year I shall almost certainly obtain a considerable increase of salary." Here, then, is an example of considerable abilities, the result of a number of years of experience and practice, absolutely lost to the people for the sole reason that to exercise them would assuredly cost the medical officer his appointment. He would be a stern moralist who would attach much blame to this medical officer for the course he had the honesty to confess that he pursued, and there are doubtless hundreds of medical officers throughout the kingdom who, though they may not give expression to their sentiments in the same words, are yet, consciously or unconsciously, coerced into adopting the same plan of campaign.

That the medical officer of health is without security of tenure is, we hold, inimical to the well-being of the community: it retards sanitary progress, prevents the due administration of the Public Health Acts, and, lastly, places medical officers of health in unfair, ambiguous, and in what in many cases have proved untenable positions. Unless medical officers of health are independent of local authorities they are subject to unfair conditions to which no man should be

exposed; they hold positions in which neglect rather than performance of duty leads to advancement and comfort.

We shall be sorry if anything in this article is taken as reflecting on medical officers of health. The very opposite is intended, and we yield to no other journal a greater interest in, or appreciation of, the excellent work that has, in spite of conflicting circumstances, been effected by medical officers of health in this country; at the same time we feel that the time has now arrived when plain language should be used in laying bare the defects in the system of their appointment. The public ought no longer to be defrauded of the benefits of the Public Health Acts, nor should such an important branch of our profession as that of the medical officer of health be left in so unsatisfactory a state as it is at present.

We trust, therefore, that medical officers of health will not, now the subject has been revived, allow it to drop until they have succeeded in obtaining the much-needed reform of security of tenure. At the same time, we are of opinion that if they will take up first the question of security of tenure and treat that of superannuation as secondary they will have a far stronger case to go upon and one far more likely to attract the attention and sympathy of the general public.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Dec. 14th, the Senior Vice-President, Mr. H. G. HOWSE, being in the chair, in the absence of the President, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., who is in Natal.

The Council decided to recognise the Victoria Dental Hospital, Manchester, for instruction in mechanical dentistry, and the University College, Sheffield, was added to the list of recognised dental schools.

The recommendations from the Committee on the gown for Members of the College were adopted. They were as follows:—

1. The Members' gown shall be a black stuff gown similar in shape to the Fellows' gown, but with a plain unlooped sleeve. The gown shall have crimson satin facings of the same colour as those on the Fellows' gown, but the facings shall not extend to the back of the gown and shall not exceed two inches in the widest part.
2. Gowns may be worn by Members on all ceremonial occasions.
3. Members who are graduates of universities shall be entitled, if they please to do so, to wear their university gown on the occasions on which the Members' gown may be worn.

The gown may be obtained from Messrs. Ede and Son of Chancery-lane, and from Mr. W. Northam of 19, Tavistock-street, Strand, W.C. The Council further decided that the crimson facings of the Fellows' gown shall not exceed six inches in widti..

A report was received from the Vice-Presidents on the proposed Cartwright prize and the Council decided, on the advice of the solicitor to the College, that the proposed transfer of a trust fund to found a Cartwright prize could not be accepted by the Council under the existing deed of trust. It might, however, be accepted if the present trustee thought fit to apply to the Charity Commissioners to make the trust amenable to certain conditions.

Mr. W. Anderson and Mr. H. W. Page were re-elected examiners and Mr. Bernard Pitts was elected a member of the Court of Examiners.

The CHAIRMAN stated that the vacancy on the Board of Examiners in Dental Surgery occasioned by the retirement of Mr. Edmund Owen from the Court of Examiners would be filled up at the next meeting of the Council.

The CHAIRMAN reported the proceedings at the annual meeting of Fellows and Members on Nov. 16th (and published in THE LANCET on Nov. 16th and 23rd), and stated that in addition to 13 members of the Council there were present 13 Fellows and 67 Members.

A committee was appointed to prepare the formula for the alteration of two sections of the regulations for the diploma of Fellow, as already approved.

The resolutions carried at the annual meeting of Fellows and Members were read and in reply to the first the following motion was carried:—

That the Council are of opinion that there are no sufficient grounds for altering the decision at which they arrived on July 13th last respecting the introduction into the supplementary Charter of some provision for the representation of Members on the Council.

The second resolution was referred to the Discipline Committee.

In reply to the third resolution the Council decided—

That the mover and seconder be informed that the principles adopted by the Council respecting the registration of midwives were fully set forth in the report of the Council laid before the meeting of Fellows and Members in 1898, these principles being the same as those adopted by the General Medical Council.

The fourth resolution was referred to the Committee for General Purposes.

The resolutions referred to are the following:—

1. That this meeting regrets that the Council, having called a meeting of Fellows and Members in July last ostensibly to consider the terms of a supplementary charter, should have entirely disregarded the principal resolution then adopted; and this meeting further considers that the introduction into the Centenary Charter of some provision for the representation of Members would have been most opportune, and trusts that the Council will even yet seize this unique occasion of terminating by an act of grace a long and wearisome controversy.
2. That, in the opinion of this meeting, no Fellow or Member of the College ought to be allowed to act as medical officer to any association (whether a registered friendly society or not) which has for one of its objects the provision of medical attendance and which in pursuance of that object advertises and canvasses for patients; and the Council is once more urged to announce that the holding of such appointments is contrary to the declaration made by Fellows and Members on their admission.
3. That this meeting regrets that the report of the Council regarding the registration of midwives has not been laid before it. This meeting trusts that the Council will adopt the principle that no person, male or female, shall be recognised as qualified to practise midwifery who is not also qualified in medicine and surgery.
4. That this meeting of Fellows and Members of the College would respectfully urge on the Council the desirability in the future of due notice of the annual meeting of Fellows and Members being given by the College to each Fellow and Member by post or otherwise, together with a copy of the report from the Council.

The junior Vice-President, Mr. JOHN TWEEDY, reported the delivery of the Bradshaw Lecture by Mr. Henry G. Howse on Dec. 13th, the subject of the lecture being "A Centennial Review of Surgery."

The best thanks of the Council were given to Mr. Howse for his lecture and he was requested to print it.

It was stated with regard to the application for a Supplementary Charter that the Home Secretary had been instructed to make the necessary preparations for the granting of the Charter.

A letter was read from Mr. T. Bryant reporting the proceedings of the General Medical Council at their late session, and the thanks of the Council were given to Mr. Bryant for his services as representative of the College on the General Medical Council.

A letter was read from Mr. H. E. Allen, registrar of the General Medical Council, forwarding a copy of the following resolution adopted by that Council, viz.:—

That the Council, having regard to the fact that it is contrary to the interest of the public to have two competing examining boards sitting in London, strongly recommend the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Apothecaries' Society of London to combine for the purpose of holding qualifying examinations conjointly.

The letter was referred to the Committee of Management.

A letter was read from Sir William Turner, President of the General Medical Council, stating that that Council adhere to their regulation of June 7th, 1899, respecting the registration of medical and dental students and inviting the College again to take the matter into consideration.

This letter was also referred to the Committee of Management.

WORKHOUSE MEAL.—The food of workhouse inmates is now generally good and substantial but the contractors sometimes want looking after. At a meeting of the Nantwich Board of Guardians on Dec. 9th Mr. Carter Bell of Manchester reported that a sample of oatmeal submitted to him was very much adulterated with what he should call refuse or sweepings. "In fact," in the words of the report, "the sample was more fit for making food for pigs than porridge for human beings. The oatmeal is old and stale, which gives the mixture a bitter flavour." A letter was read from the contractors stating that the oatmeal from which the sample was taken was guaranteed to be pure. After a long discussion it was decided to forward to the contractors a copy of the official analysis, with an intimation that the guardians would insist upon the conditions of the contract being fulfilled—namely, that the best quality of oatmeal should be supplied. It is well to keep a watch over the excessive development of the commercial instinct.

Obituary.

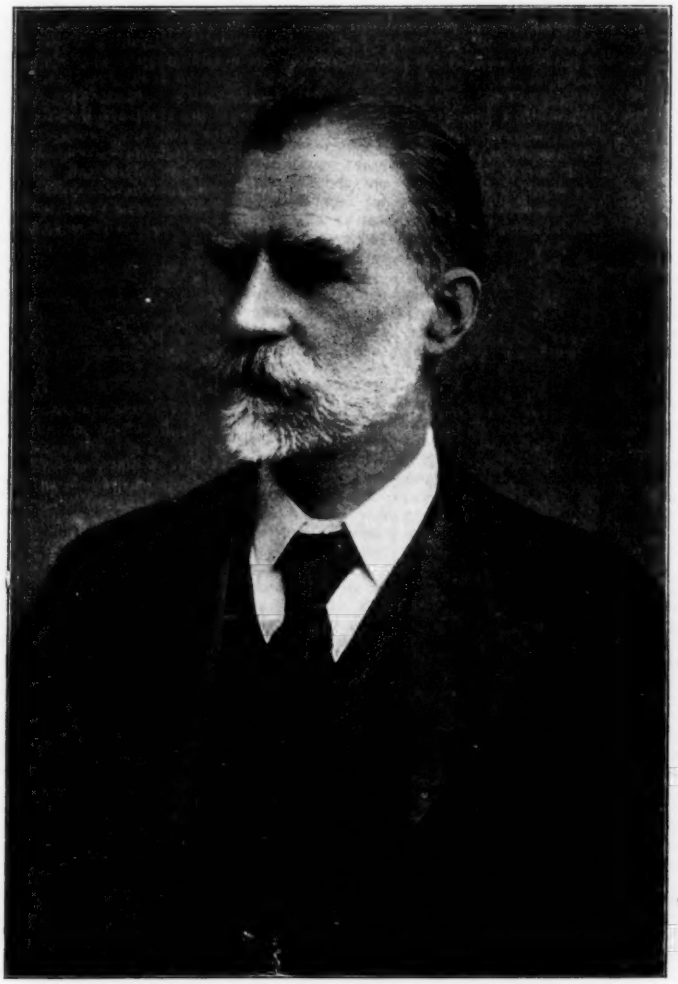
SIR RICHARD THORNE THORNE, K.C.B., F.R.S., M.B., F.R.C.P. LOND., LL.D. EDIN., D.SC.R.U.I.

THE sudden death of Sir Richard Thorne Thorne, Principal Medical Officer to the Local Government Board, which occurred on Monday afternoon last, has come as a great shock to his friends as well as to the medical world at large; for although during the last three or four years he had not been in very robust health, the indefatigable manner in which he discharged his onerous and responsible duties precluded the idea from crossing any minds that the life-work of so energetic a man was nearing a sudden termination.

Sir Richard Thorne was born at Leamington in 1841, his father, Thomas Thorne, being a banker in that town. He was the second and eldest surviving of four sons, all of whom became medical men. He received his early education at Neuweid in Prussia and at a Parisian *lycée*, whence he proceeded to the Mill-hill Grammar School when about 17 years of age. In Paris, where he was a schoolfellow of M. Waddington, he took two first prizes in science, thus early showing the bent of his mind, while the international character of his education as much as his other qualities made him later so great a force in representing British ideas at International Conference Boards. On leaving Mill-hill Grammar school he served—as was very usual 35 years ago—an apprenticeship with a general practitioner, Dr. Burt of Leamington, after which he entered at St. Bartholomew's Hospital. There he had a distinguished career as a student, culminating in his obtaining a double first in 1866 at the final examination for the degree of M.B. at the University of London. He then held the usual minor appointments at the hospital, became physician to the casualty department and demonstrator of microscopical anatomy, and lectured on psychology in the medical school. He was also elected physician to the Royal Hospital for Diseases of the Chest (City-road) and to the London Fever Hospital. About this time he was employed by the Medical Department of the Privy Council to make several inquiries and as a result Sir John Simon offered him a permanent post in the department, which was a little later transferred to the Local Government Board. From that time until the day, we might almost say the hour, of his sadly sudden death his name has been associated, as subordinate or chief, with most of the valuable work which has been done by successive British Governments of varying politics to preserve the public health and to render this country the acknowledged pioneer in matters of sanitary science and its legislation.

The earliest thing to bring Dr. Thorne's name prominently before the public was his work with regard to quarantine and the international regulations for the prevention of the importation of disease from country to country along the lines of intercourse. In 1885 there was held at Rome an International Sanitary Conference and at this Great Britain was represented by Sir J. Savile-Lumley, the British Minister at Rome, Sir W. Guyer Hunter, and Dr. Thorne, and British India by Sir Joseph Fayrer, and the late Dr. Timothy Lewis. Dr. Thorne was at that time one of the junior members of the medical staff of the Local Government Board, and doubtless owed his selection to his mastery of French, the official language of the Congress, as much as to his general merits. At this conference a series of proposals was formulated by the representatives of different nations with respect to the passage of vessels from the East to the Mediterranean by the Red Sea and Suez Canal. One of these resolutions aimed at the compulsory medical inspection at Suez of all vessels by an officer invested with international authority, the officer to be empowered to decide if any vessel could be regarded as "suspect" or no. The British and Indian delegates opposed the resolution, stating plainly that any measure which might impede the free passage of British ships under all circumstances through the Suez Canal was foolish from a public health point of view. Dr. Thorne in particular maintained that the suggestion of the delegates would not stop at inspection only but was the first step towards the imposition of quarantine, which England had always opposed and which he maintained had proved to be useless. The resolution was carried, but amended by the adoption of a proposition that if the visiting medical officer suspected any case of cholera on board any ship all passengers and crew should be landed and the ship detained for five days to see if any further case occurred. Again Sir Joseph Fayrer, Dr. Lewis, and Dr. Thorne protested against the reversion to a quarantine system, Dr. Thorne maintaining that if vast masses of passengers and crew were landed in the horrible lazarettos of the Red Sea shore the disease would not be stayed but spread, and urging that the Conference had no right to suggest that Great Britain should deposit in the midst of the Egyptian populations that which other nations feared to receive and deal with on their own shores. He explained that in her action against quarantine England was not influenced by pecuniary motives and that the authorities had within a short space of time spent over 27 millions of money in the interests of human life and health, and he showed by statistics of mortality how remunerative this expenditure had been, adding that it would be a lamentable day for England if she should ever think of changing such a system for the useless delays of quarantine which seemed to find favour with the Conference. Although the British and Indian representatives were overruled on that occasion there can be no doubt that their vigorous presentment of modern ideas were effective in causing the time of detention to be very short and may really be said to have given the death-blow to any universal faith in the old-fashioned panacea of quarantine. The International Sanitary Conference at Rome was followed by others at Dresden, Paris, and Venice, in all of which Conferences Dr. Thorne represented Great Britain and was recognised by his brother delegates as the leading voice in favour of the views, now generally accepted, that quarantine measures are comparatively futile and that every nation should have proper provision at its ports for dealing with infected shipping. At Dresden an international agreement was arrived at in 1893 on a basis giving rise to the smallest amount of restrictive legislation compatible with security to the populations concerned, an agreement which tended to relax such quarantine restriction as was still existent and to replace it by the application of approved remedies of hygiene. At Paris in 1894 the proceedings of the Conference were marked with the greatest cordiality, and although some restrictions were still maintained, to the regret of the British representatives, its decisions were on the whole progressive. And now since the conference at Venice in 1897 all the first-class powers of Europe are acting under a Convention lasting five years from the date of notification, and renewable every five years, under which they contract to use uniform measures to prevent the incursions of cholera, &c. The measures are those of notification, medical inspection, purification of infected material, and isolation on shore of infected passengers and crew; so that by international consensus of opinion quarantine in its old-fashioned sense is abolished as far as these nations are concerned. There is no exaggeration in saying that by the part which Dr. Thorne played in advocating a quarter of a century ago and persistently since that date the abolition of the inhumane and short-sighted regulations of quarantine he has conduced to the alleviation of an enormous amount of misery in all countries as well as to the arrest of the spread of disease—things which constitute him a public benefactor in the broadest sense of the words.

In 1892 Dr. Thorne succeeded the late Sir George Buchanan as Principal Medical Officer of the Local Government Board, and five years later had the distinction of K.C.B. conferred upon him, having received the C.B. several years previously. His period of office as head of his department, though brief, was crowded with matters of the first sanitary importance and he brought to bear upon his duties an appetite for work, a judgment, a tact, and a knowledge of detail which proved him to be a remarkable amalgamation of the man of business with the man of science. Nothing was too large for his grip and nothing too small for his attention, and to give a complete account of his work at the Local Government Board would be, in a way, to write the medical history of the Board during the years in question. We may, however, single out three subjects of the first public and sanitary importance where the principles of preventive medicine, as understood by the scientific world, have been much revolutionised of late, and where Sir Richard Thorne, as head of the public health bureau of the country,



SIR RICHARD THORNE THORNE, K.C.B., F.R.S.,
PRINCIPAL MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

showed himself to be the right man in the right place, as much by his individual work as by his power of administration. Firstly, there is the increased prevalence of diphtheria, running hand-in-hand with the increase of our knowledge as to its origin and prevention and as to the measures which should be taken against it. Next, we have the general recognition of the infectious nature of pulmonary tuberculosis, of its preventability no less than its curability. And, lastly, there are the modifications in the law of vaccination. In dealing with each of these weighty subjects Sir Richard Thorne proved himself to be, not only the official who could assist the Government by devising measures to carry out new legislation, but also the scientific man who with deep knowledge could discuss the various problems that presented themselves from an extraordinarily high range of instruction. The general instruction enjoyed by the medical profession in this country and no less by the public on the subject of diphtheria is largely due to Sir Richard Thorne. In 1891 he delivered the Milroy Lectures before the Royal College of Physicians of London, taking as his subject the Natural History and Prevention of Diphtheria. In these lectures he told the story of the disease, furnishing details which had not until that time been available for many, for they were derived from the official reports made to the Local Government Board and the reports of medical officers of health, which are not easily accessible to the general reader. As a result he was able to give information concerning diphtheria not to be found either in the work of one author or in the more familiar systems of medicine written by many authorities in collaboration. No one who was not himself a trained and skilful observer could have unravelled, as Sir Richard Thorne did in these lectures, the intricacies of a subject which had for years been obscured in a mass of literature often containing apparently conflicting statements. He had carefully to compare and weigh both new facts and old facts presenting themselves in the light of newer knowledge, and he showed himself to have a peculiar fitness for the work which he undertook. Familiar with his authorities, accustomed in the ordinary course of his duties to sifting the evidence of others, and himself a contributor to the knowledge which he was codifying, he summed up in his Milroy Lectures all the circumstances of diphtheria as it was then understood and placed before the profession a volume of the first importance, thereby doing great service to the whole of the sanitary organisation of the kingdom as well as to every general practitioner whose duty it is to work hand in hand with that organisation.

With regard to tuberculosis Sir Richard Thorne's individual work was hardly less valuable. During the last 10 or 15 years our methods of regarding tuberculosis have undergone a great change, whether its therapeutics or its prevention or its causation be considered, and in each department of recent research or conjecture we find Sir Richard Thorne in the van, every whit as much in the character of a man of science giving instruction as in that of an official to whose department the administration of future legislation will be confided. In 1888 a Departmental Committee inquired into the cause of pleuro-pneumonia of cattle and tentatively recognised the contagious nature of the disorder. As a result a Royal Commission was appointed in 1890 to inquire into the effect of food derived from tuberculous animals on human health. A valuable report proving that an appreciable part of the tubercle that affects man is obtained from food was the result, but during the time of the sitting of the Royal Commission scientific and general knowledge upon the subject became greatly extended, so that the subject was ripe for re-consideration almost immediately. In 1896 Sir Herbert Maxwell's Royal Commission was formed with a similar reference upon which Sir Richard Thorne sat. This Commission, it should be remembered, rendered an exhaustive report upon very sound evidence. Its members gained first-hand information on their subject by continental inquiries and they made a series of recommendations with regard to the infection of meat and milk by tubercle, as well as to the management of slaughter-houses, of cowsheds, and of dairies which should form the ground plan of some of the most beneficent sanitary legislation of the reign. On this Commission there was no more energetic and helpful Commissioner than the late Sir Richard Thorne, and this because he held the view that the source of danger, especially with regard to infection of man by meat, had been over-rated. He considered that measures of stringency had been demanded by some sanitarians which were entirely impracticable and which only appeared necessary when considered in the light of certain laboratory experiments having little or no parallel in everyday life. By thus taking a stand against alarmist counsels he served the true purpose of this Commission, for he brought their wise recommendations within the range of politics. He adopted a similar policy when he took a decided line against the compulsory notification of pulmonary tuberculosis. His views will be found in the Harben Lectures which he delivered in 1898, where he pointed out that there was no similarity between pulmonary tuberculosis and the diseases now notifiable that would justify compliance with the demand to add the disease to the list of infectious diseases included in the schedule of the Notification Act of 1889. The Notification Act, he said, was passed in order to enable authorities to control the movements of persons who for a few weeks of their lives were in a state which constituted a danger to public health. Such persons were, by reason of a temporary and acute illness, unfit to follow their usual avocations. In the case of phthisis he considered that any corresponding sanitary control would have to be exercised for a series of years, during which time the phthisical persons were not only quite capable of continuing in their employment but it might be and generally would be absolutely essential that they should be able to maintain themselves and their families as well. He considered that any system of notification of phthisis should be voluntary and might well be supplemented by the construction out of public funds of sanatoria for the temporary sojourn of the invalids. He was unable to believe that any system of compulsion could be devised that would be free of espionage, and his official experience told him that to obtain legislation that promised to infringe the liberty of the subject was nowadays very difficult.

During 1898 Sir Richard Thorne's department had before it the momentous question of vaccination. As a result of the final report of the Royal Commission, which had sat for seven years and had considered the subject from every possible aspect, the Government had concluded that fresh legislation was necessary. They accordingly introduced a Bill into the House of Commons which, when it finally passed, altered the existing law, not merely with regard to its so-called compulsory provisions, but the alterations, such as the system of domiciliary vaccination and the use of glycerinated calf-lymph, may, taken together with the conscience clause, have the result of making vaccination more acceptable than before and of rendering organised opposition less effective. This measure entailed upon Sir Richard Thorne an enormous mass of work and of anxiety. It was as impossible for him as for any of us to estimate exactly what the results of the new vaccination law would be, but he never disguised his misgivings at the abolition of the compulsory clauses, although he recognised that a compulsion which was only verbal and not effective was worse than no compulsion at all. For one thing members of the profession have to thank Sir Richard Thorne mainly, whatever their views may be with regard to the new Vaccination Act: he doubled the scale of fees which was intended by Government to be offered to the public vaccinators. In so doing he followed his invariable line when dealing with the medical profession. Whether they were or were not members of the service of which he was the official head he always strove to obtain for them fair remuneration and a proper recognition of the value of their services to the community.

We have given the salient points of Sir Richard Thorne's career and from them, as well as from the excellent portrait which accompanies this memoir, we think that our readers, who were personally unacquainted with him, can deduce a true idea of the manner of the man that he was. His portrait conveys exactly the impression of firmness and ability which with lucidity of judgment were his characteristic qualities. He owed it to his official position to preserve a strict neutrality upon many questions concerning which his scientific training would have prompted him to take a strong line; but where he was untrammelled he showed himself to be a man of strong opinions. For example, at the meetings of the General Medical Council, to which body he was recently elected as a Crown Representative, his was an influential voice, for although not a frequent speaker his words were always to the point and founded upon accurate information. For he was at the time of his decease

lecturer on public health at St. Bartholomew's Hospital and examiner at Cambridge University on the same subject, so that he had personal experience to add to his other claims upon the Council's ear. In his writings, also, he displayed considerable independence. Although no big book bears his name he was a prolific author, for the reports which he made during his long official career to the Privy Council and the Local Government Board would be sufficient to fill many volumes. In his annual reports on the progress of national sanitation he wrote with extreme clearness and cogency, forcing upon the attention of his department and of the whole country the needs of public health as evidenced by its present conditions. One of his blue-books on the Use and Influence of Hospitals for Infectious Diseases has had immense influence in establishing these valuable adjuncts to public health throughout the country. In short, by the death of Sir Richard Thorne at the comparatively early age of 58 years the nation is deprived of a man whose sterling public worth it is difficult to estimate too highly. He succeeded admirable predecessors and proved himself fit to sit in their chair, not only by continuing their work, but by infusing into it new spirit. His dream was the formation of an international scheme of preventive medicine, and by his personal exertions as well as by the influence that he exercised over a small but very competent band of assistants he made his dream a possibility, while he insured for England a leading part in the councils of any such federation that may be formed in the future.

Sir Richard Thorne, in addition to the honour which we have mentioned, was awarded the Stewart prize of the British Medical Association in 1893, about which date he was elected a Fellow of the Royal Society. In 1898 the degree of LL.D. Edinburgh was conferred upon him and in the same year he received the degree of D.Sc. from the Royal University of Ireland and the honorary Fellowship of the Royal College of Physicians of Ireland. He was also an honorary member of the Royal Academy of Medicine of Rome and Foreign Associate of the French Society of Hygiene, and in 1887 was President of the Epidemiological Society.

Sir Richard Thorne married in 1866 Martha, a daughter of the late Mr. Joseph Rylands of Hull, by whom he leaves three sons, all of whom are in the medical profession. To his family we are sure all our readers will join us in extending sympathy under their sudden bereavement. He had for some time suffered from varicose veins which were liable to inflammation and at the end of last week decided to remain in bed for a few days where he was able to transact much of his official business. A clot becoming detached in one of these inflamed vessels he died suddenly from embolism.

The funeral, which was of quite a private character, took place on Wednesday at Woking.

MATTHEW LOUIS HUGHES, L.R.C.P. LOND., M.R.C.S. ENG., L.S.A.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

CAPTAIN MATTHEW LOUIS HUGHES, of the Royal Army Medical Corps, who was killed at Tugela River, was one of the foremost scientific workers in the army and his death comes as a very severe loss to the profession. Captain Hughes was the son of Colonel E. Hughes, C.M.G., and was educated in King's College School. In September, 1885, at the age of 18 years, he joined the Medical Department of King's College, and was one of the ablest scholars of his time. His practical work was excellent and he was soon appointed Assistant Demonstrator of Anatomy by Professor Curnow. He was intended for the Army Medical Service and passed through Netley with distinction, being Parkes Prizeman of his year. He was specially interested in Mediterranean fever and had written many papers and articles on the subject both in our columns and elsewhere. His last post before leaving for the Cape was at Aldershot, where he was assistant sanitary officer, and as such had charge of the patients who suffered from the curious attacks of gastro-enteritis which occurred there in August and September. An account of this outbreak appeared in our issue of Nov. 4th, 1899, from the pen of Captain Hughes, R.A.M.C., assisted by Captain C. W. R. Healey, R.A.M.C. He had only recently been made an Associate of King's College and nobody was more thoroughly

CAPTAIN M. L. HUGHES, R.A.M.C.

popular with his fellow-students and teachers than Matthew Louis Hughes.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Mudd, Professor of Surgery in the St. Louis Medical College.—Dr. Hendricks, Professor of Anatomy in the University of Minnesota.—Dr. Woodbridge, Professor of Physiology, Williams College, Massachusetts.—Dr. Lavisé, Professor *agrégé* of Surgery in the University of Brussels.—Dr. A. Nascimbane, editor of the *Gazzeta Medica Lombarda*.—Dr. Georg. Krukenberg, *privat-docent* of Midwifery and Gynæcology in the University of Bonn.

REPORT ON PLAGUE IN CALCUTTA.[1]

FEW things have been more remarkable in the behaviour of the plague epidemic in India than the manner in which certain places have escaped with a comparatively slight visitation of the disease although presenting all the conditions which are usually thought to be most favourable for its propagation. Calcutta is a notable instance. Apart from the occurrence of certain doubtful cases of plague in that city in the autumn of 1896—cases which gave rise to considerable controversy at the time—the beginning of the epidemic there may be said to date from the middle of April, 1898. From that time until the end of July in the same year—the period covered by Mr. Cook's report—only 190 cases of plague were reported in the city, and of these 155 died. Since then we know from other sources there has been a considerably wider spread of the disease in Calcutta, notably during the months of April and May of the present year, and at the present time some 30 or 40 deaths from the disease are reported weekly as occurring there. But this is obviously still a small figure for a city of some 700,000 or 800,000 inhabitants, and is insignificant in comparison with the mortality in Bombay, where the weekly returns of plague deaths have frequently been between 2000 and 3000 for long periods together. Whatever the explanation may be the sum of the conditions obtaining in Calcutta is much less favourable for the propagation of plague than the sum of the conditions obtaining in such places as Bombay, Karachi, Poonah, or Bangalore. That Calcutta does not owe

[1] Report on Plague in Calcutta. By J. Nield Cook, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H., Health Officer, Calcutta. Printed at the Calcutta Municipal Press, 1898.

its comparative immunity to its sanitary condition is clear from some initial remarks in this report. "In the native quarters of the town," Mr. Cook writes, "buildings have been run up under little control, so that they are crowded together on the site. Add to this an increasing population, a defective system of sewerage, and an insufficient establishment of scavengers, and no sanitarian will be surprised that, in spite of a considerable expenditure on the part of the town authorities, the health of the town has steadily deteriorated." These remarks fully confirm the statements contained in a series of articles upon "Sanitation in Calcutta" which appeared in these columns a few months ago[2] and which constituted a severe indictment of past municipal management in the Indian capital.

This report throws little fresh light upon the source from which the infection of plague was introduced into Calcutta or the method by which it was introduced. The first intimation which the health officer to the corporation received pointing to the presence of plague in the city was a letter announcing that several dead rats had been found in the East Indian Railway Company's printing office, which is situated quite close to the river Hooghli, and a little later dead rats were reported from other establishments in the same neighbourhood. Bacteriological examinations of the bodies of rats obtained from the printing office gave negative results, but plague bacilli were isolated from the bodies of the rats from the other establishments. At the same time as the occurrence of this mortality among rats the first certain case of plague in a human being was reported. The patient had died early on the morning of April 17th and the necropsy showed that death had occurred from plague. The man had not left Calcutta for some time and he lived in a part of the town which was remote from the district where the mortality among rats was occurring. An anomalous occurrence of this sort, which could be paralled by similar occurrences in the case of many other towns invaded by plague, unfortunately leaves us in the dark as to the method by which the infection was introduced into the city. The mortality among rats near the river lent some colour to the view that the infection might have been introduced by ships coming from infected ports, but not only is there no proof of this, but were there conclusive proof of it it would still remain to explain why the first recognised case of the disease occurred at a considerable distance from the place where the mortality among rats was occurring.

The further course of the outbreak was described at the time in our columns and need not therefore be dwelt upon further here.

The measures put in force in Calcutta were of a much less drastic kind than those which were employed in Bombay or Poonah. Vigilance committees, consisting of the leading native and European inhabitants, were formed in each municipal ward, and the reporting of cases was left largely in their hands. A system of licensing suitable rooms in private houses for the isolation and treatment of any case that might occur in the house was adopted; and in addition to the opening of a small number of municipal hospitals—to which the natives had a most rooted objection—"ward hospitals" were opened in each ward, under the management and control of the vigilance committees. They appear, however, to have been but little used, and the larger number of cases were removed to one or other of the large Government hospitals, which were much less objected to by the people than the special plague hospitals opened by the municipality.

Prophylactic inoculation, after Mr. Haffkine's method, was adopted from the first in Calcutta. Unfortunately, it seems to have met with much opposition from the people, who regarded the process with unreasoning alarm and were ready to believe the wildest stories in regard to the horrors of inoculation. The cry of "ticca-wallah"—the native name for an inoculator—on several occasions led to the collection of riotous mobs, and more than one innocent individual was killed by the people because he was believed to be a Government inoculator. In spite of this opposition Mr. Cook and Dr. (Miss) Traill Christie succeeded in inoculating 2490 persons between April 30th and July 23rd. Several enlightened native gentlemen set an admirable example in submitting themselves or their whole households to the operation and the absence of evil results in their cases gradually re-established a feeling of confidence in the desirability of the measure. Inoculation, however, was, as the figures show, not extensively practised and the protection of only 2490 people out of a population of over 700,000 inhabitants cannot be considered as having in any way contributed to the mildness of the outbreak of plague in Calcutta.

[2] THE LANCET, July 22nd (p. 240), July 29th (p. 306), August 12th (p. 431), and August 26th (p. 592), 1899.

PRELIMINARY MEETING OF THE BRITISH CONGRESS ON TUBERCULOSIS.

THE preliminary meeting of this Congress was held in the Gray's Inn Hall, London, on Dec. 18th. The Earl of DERBY took the chair, and in opening the proceedings said that the time had now arrived when the question of preparing for the British Congress on Tuberculosis to be held in 1901 must go forward. He was glad to think that His Royal Highness the Prince of Wales had graciously consented to preside and to open the Congress in person. He remarked that the great enemy to be combated was ignorance, the remedies for which, as for the disease which so frequently sprang from it, were light and air—the light of science and the fresh air of public opinion.

The Duke of NORTHUMBERLAND proposed the following motion:—

In view of the fact that tuberculosis, although a preventable disease, still devastates health and destroys lives in all parts of the world this meeting, consisting of representatives of medical, veterinary, and sanitary science, and also principal officials of municipal and county authorities, is unanimously of opinion that it is desirable to hold a National Congress on Tuberculosis in the spring of 1901, to which representatives from India and all dependencies of the empire should be invited and in addition honoured guests from other countries.

His Grace said that he welcomed the proposed Congress. The subject was one of the most vital interest to the well-being of this country and, indeed, to all mankind.

Sir SAMUEL WILKS, in seconding the resolution, said that one of the objects of the Association was to appeal to the public for sanatoria where patients might be cured of tuberculosis. The facts in regard to the disease were accepted with perfect unanimity by the medical profession in every civilised country and it seemed desirable that they should all meet together and discuss the matter with common accord and with some common means of action.

The motion was carried unanimously.

The ATTORNEY-GENERAL proposed the following motion:—

That this meeting has learnt with very great pleasure that H.R.H. the Prince of Wales has graciously consented to preside over the proposed Congress and to open it in person, and desires to convey to His Royal Highness the appreciation of all present of this expression of his sympathy and support.

He said it was a subject in which men of science might join together to see how by the combined effect of research and knowledge the spread of this disease might be prevented.

Lord STRATHCONA AND MOUNT ROYAL, Agent-General for Canada, in seconding the motion, said that a successful commencement had been made in the open-air treatment of consumption in Canada and there was now a sanatorium in the North-Western portion of Ontario.

The motion was carried unanimously.

Lord LOCH moved:—

That this meeting heartily approves of the steps already taken by the National Association for the Prevention of Consumption to initiate the undertaking, and earnestly invites the coöperation of representative bodies interested in the public health in carrying out the necessary organisation.

He said that the proposed Congress was one of the most important works with which to commence the new century.

Dr. JAMES ANDREW, President of the Royal College of Physicians of Edinburgh, seconded, and said that Edinburgh had been fully alive for some time to its responsibility in this connexion. The medical profession and the municipal and parochial authorities hailed with pleasure the proposal to hold the Congress.

The motion was carried unanimously.

Earl SPENCER moved:—

That this meeting is of opinion that steps should be at once taken to obtain subscriptions and to open a Congress fund.

He said that in every undertaking it was necessary to have the sinews of war, and to make the Congress a success there must be liberal subscriptions. One of the most important things to be done was to educate the public to recognise the enormous advantages which they would gain.

Dr. J. W. MOORE, President of the Royal College of Physicians of Ireland, in seconding the motion, said that they had not been idle in the sister isle. Since the movement was started in 1896 at the meeting of the British Medical Association at Carlisle the public had been educated in Ireland as to the dangers and the means of obviating the dangers of tuberculosis.

The motion was carried unanimously.

Lord TEMPLETOWN moved:—

That those present at this meeting be *ipso facto* members of the General Committee. That the names mentioned in the attached list form the Organising Council, with power to add to their number. That the Earl of Derby be president of the said Council, that Sir William Broadbent be chairman, and Mr. Malcolm Morris be appointed secretary-general.

Mr. A. L. LEON, Chairman of the Public Health Committee of the London County Council, seconded the motion, which was carried unanimously. The following is the list of the Organising Council: Lord Strathcona, Sir James Blyth, Bart., Sir William Broadbent, Bart., Sir George Brown, C.B., Sir John Brunner, M.P., Sir Ernest Clarke, Sir J. Crichton-Browne, M.D.Edin., Sir Edward Hulse, Bart., Sir Henry Littlejohn, Sir Herbert Maxwell, Bart., Professor Clifford Allbutt, Professor Corfield, Professor Delépine, Professor J. McFadyean, Professor Sims Woodhead, Colonel Macleod, Colonel Montefiore, Dr. F. W. Burton-Fanning, Dr. T. Henry Green, Dr. T. W. Grimshaw (Registrar-General of Ireland), Dr. G. A. Heron. Dr. Hillier, Dr. C. Holman, Dr. A. Macfadyen (Jenner Institute), Dr. Hector Mackenzie, Dr. J. W. Moore, Mr. Shirley Murphy, Dr. J. Niven, Dr. Isambard Owen, Dr. R W. Philip, Dr. StClair Thomson, Dr. Thomson, Dr. Dawson Williams, Dr. Theodore Williams, Dr. Arthur Newsholme, Mr. James Pollard, Mr. Rube, and Mr. Swithinbank.

Sir WILLIAM BROADBENT, in proposing a vote of thanks to the chairman, said that what particularly had to be done was to try to remove the terrible apathy which existed in the public mind in regard to the measures necessary for the prevention of tuberculosis. The public must be brought to agree to the carrying out of the precautions which are necessary, and the object of the Congress was to impel and excite public opinion in this direction.

Sir J. CRICHTON-BROWNE, in seconding the motion, compared the medical profession to the intelligence department of the army and after a sympathetic reference to the severe losses incurred by our forces in South Africa drew attention to the fact that 60,000 human beings perish every year from tuberculosis in this country and that there are always with us 200,000 persons more or less maimed and crippled by the tubercle bacillus.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances and Administration of the Urban District of Aldershot, with Special Reference to the Fatal Prevalence of Diphtheria therein,[1] by Dr. R. J. REECE.—In this report Dr. Reece has dealt with numerous sanitary and administrative conditions obtaining in the town of Aldershot. This town, as he points out, sprang up with, and exists by reason of, the camp. The influence of the camp upon the town and of the town upon the camp is, in the matter of spread of infectious diseases, so important that it would have been quite useless to attempt to study the behaviour of diphtheria in one apart from the other. Accordingly, Dr. Reece has, with the coöperation of the principal officers of the military medical service at the camp, made inquiries which enabled him to report on similar lines, as regards both camp and town, upon each of the principal features of the diphtheria prevalence. Facts accumulated as to diphtheria at Aldershot between 1891 and the end of last year are exhibited in a series of statistical tables which illustrate diphtheria incidence, mortality, attack-rate, age distribution, and the like for camp and town respectively. There is much internal evidence in the report of the difficulties which have had to

[1] London, Eyre and Spottiswoode, East Harding-street; Edinburgh, John Menzies and Co.; Dublin, Hodges, Figgis, and Co. Price 1s.

TABLE SHOWING YEAR BY YEAR, FROM 1891 TO 1898, FOR THE TOWN AND CAMPS OF ALDERSHOT, THE ATTACK RATES, BY DIPHTHERIA AND ALLIED THROAT SICKNESS, PER 1000 OF THE ESTIMATED POPULATION AT ALL AGES AND IN THE AGE GROUPS OF UNDER 15 YEARS OF AGE AND OVER 15 YEARS OF AGE.

Year.	Town of Aldershot.									Both Camps, Aldershot.								Year.
	All ages.			Age group 0-15 years.			Age group, 15 years and upwards.			All ages.			Age group, 0-15 years.			Age group, 15 years and upwards.			
	Population.	Number of known attacks.	Attack rate per 1000 of population.	Estimated population.	Number of known attacks.	Attack rate per 1000 of population.	Estimated population.	Number of known attacks.	Attack rate per 1000 of population.	Average population (Figures supplied by military authorities.)	Number of known attacks.	Attack rate per 1000 of population.	Average population.	Number of known attacks.	Attack rate per 1000 of population.	Average population.	Number of known attacks.	Attack rate per 1000 of population.	
1891 ...	12,641 census.	9	0·71	4840	8	1·65	7801	1	0·13	17,267	6	0·35	1823	5	2·74	14,394	1	0·07	1891
1892 ...	13,192 estimated.	17	1·29	5051	12	2·38	8141	5	0·61	18,374	13	0·71	1783	11	6·17	15,723	2	0·13	1892
1893 ...	13,743 ,,	17	1·24	5362	12	2·24	8381	5	0·60	18,099	15	0·83	1768	14	7·92	15,825	1	0·06	1893
1894 ...	14,294 ,,	29	2·03	5473	24	4·39	8821	5	0·57	18,484	13	0·70	1824	9	4·93	16,151	4	0·25	1894
1895 ...	14,845 ,,	36	2·43	5684	27	4·75	9161	9	0·98	19,522	454	23·26	2001	51	25·49	17,024	403	23·67	1895
1896 ...	15,396 ,,	46	2·99	5895	36	6·11	9501	10	1·05	20,233	249	12·27	2178	62	28·47	17,600	187	10·63	1896
1897 ...	15,947 ,,	126	7·90	6106	116	19·00	9841	10	1·02	20,579	68	3·30	2156	51	23·65	17,887	17	0·95	1897
1898 ...	16,500 ,,	155	9·39	6317	143	22·64	10,183	12	1·18	19,895	37	1·86	1999	33	16·51	17,417	4	0·23	1898

be met in obtaining satisfactory data of this kind in the case of a population which fluctuates so much as that of Aldershot. Some of these difficulties were insuperable; for instance, in the town the record of age of cases of notified diphtheria seems to have been imperfect, while in the camp there was no sufficient record of age or of sex of children attacked to allow the incidence of the disease among the military population to be fully studied. Notwithstanding obstacles of this sort the contribution which Dr. Reece has made seems likely to be particularly useful, not only by giving an account to date of the behaviour of the disease under described conditions throughout a series of years, but also by affording valuable indications to those concerned with public health and its administration among the troops and in Aldershot town of sanitary and statistical matters which need to be taken account of day by day if progress is to be made in understanding the causes of local spread of diphtheria and in taking suitable measures of prevention. It is satisfactory to find from the report how comprehensive have been the recent efforts for prevention of diphtheria in the camp undertaken under the direction of Surgeon-General O'Dwyer, and that in particular the appointment two years ago of a special medical officer for sanitary purposes has evidently been attended by the best results. How important the question of dealing with diphtheria at Aldershot has become may best be illustrated by the following table given by Dr. Reece.

Among the factors which at the date of his inspection could be recognised as probably concerned in disseminating diphtheria Dr. Reece draws attention to the operation of school attendance both in town and in camp. Incidents such as the following often came under observation of medical officers of health:—

> During my inspection of Aldershot town each school was visited and inquiry made into certain matters, including the method in vogue for cleansing the slates used by the pupils. The answer to this query was practically the same at all the schools and was to this effect. The schoolmaster or mistress had a mop or sponge attached to the end of a stick, which he or she dipped into water, and moistened the slate; the children, with a rag or wiper which they provided themselves, then cleaned the slate. This was the theory, but the practice would appear to be somewhat different, as on one occasion when a statement similar to that set forth above had just been completed by a teacher another teacher in the schoolroom ordered a class of infants to clean their slates. This they proceeded to do by expectorating on or licking the slates and rubbing them with their rags. If a child had no rag it borrowed a neighbour's and the rags themselves were moistened in similar manner to the slates.
>
> Given a case of infectious sore throat it is easy to see how it might be spread by such methods as above described. Added to this is also the fact that the slates are the property of the school and no child exclusively uses one slate.

As regards infection from person to person apart from aggregation of children in school the inspector draws attention to numerous opportunities of intercommunication between town and camps which tend to facilitate transmission of diphtheria from one to the other. This is the more important, as while cases in the camp are promptly isolated in hospital, no hospital provision has been made for cases of diphtheria in the town. Moreover, in Aldershot town there seem to be conditions which in one way or other peculiarly favour endemic diphtheria. The sewerage of the district is in many ways imperfect, and for this and other reasons much pollution of soil with organic filth occurs. Noteworthy also in this connexion is the extent to which various animals are kept in the small backyards and in the neighbourhood of Aldershot dwellings. Dr. Reece gives instances where there seems to have been strong ground for suspicion of transmission of diphtheria by domestic animals.

The sanitary administration of Aldershot Urban District seems to have been in many ways unsatisfactory, although there is now promise of improvement in certain directions. Proper control under by-laws and regulations of common lodging houses, nuisances, dairies, and cowsheds has been wanting. Overcrowding, which must exist in certain localities, has scarcely ever been dealt with. Tenement houses in the circumstances of Aldershot should certainly be supervised under special by-laws. Water-closets are in from 25 to 30 per cent. of cases without any flushing apparatus, house drains are often faulty, and backyards are unpaved. It is to be hoped that, alike in the interests of the military and civil population of Aldershot, the defects to which Dr. Reece has drawn attention will be promptly and efficiently dealt with.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Derbyshire County District.—The total population of this county was estimated to the middle of 1898 as 485,760. The birth-rate was 33 and the general death-rate was 16·34 per 1000. As regards zymotic diseases the death-rate from scarlet fever was 0·26 as against 0·11 per 1000 in England and Wales, and Dr. Sidney Barwise thinks, or rather predicts, that when the several isolation hospitals in the county are in working order and other preventive measures are adopted the death-rate from this disease in the urban districts will be considerably less than it was during 1898. We trust that this may be so, but predictions of this nature in face of the varying fatality rate of scarlet fever are perhaps a little unsafe. Dr. Barwise is, too, of opinion that the autumnal rise in enteric fever is an "indication for the more vigorous use of the water-cart," the cases occurring "when the ground is dry and filth and dust from the privy middens can be blown about in the process of emptying." Very considerable progress is being made in the county in the provision of isolation accommodation and it looks as if there was a fair prospect of the whole county being soon provided with such accommodation, as least in so far as diseases other than small-pox are concerned. Dr. Barwise has continued during the past year the investigations which he commenced in 1896 in reference to sewage purification and he reports that an extended experience has confirmed his original conclusions with regard to the value of coal filters, which he finds yield excellent results provided the rate of filtration does not exceed 250 gallons per square yard per day. The method of applying the sewage to these filters is, he tells us, a matter of importance, that by which the sewage is distributed by means of a spray being, he finds, the most appropriate.

Cornwall County District.—Within quite recent years we have not heard as much of the Sanitary Committee of this county council as we did at the time when Mr. Trevail was to the fore, but although "since 1892 no Annual Report has been prepared for various reasons" the committee in submitting their report for 1898 hope that in future a report will be issued regularly. The volume here in question is apparently the work of the Sanitary Committee alone, and it is signed by the chairman of that committee. Beyond an analysis of the vital statistics and a summary of meteorological data nothing appears to have been attempted and we are left in the dark as to the sanitary progress of the county and of the reports of the district medical officer of health. Possibly the object of the report is to show that without a county medical officer of health but little can be done or said, and, if this be so, we can only express a hope that the object of the report may be achieved and that a suitable officer may be shortly appointed. The population of the county was in 1891 321,870 and in view of the belief that the population has not increased this census enumeration is adopted as the basis of the several rates. The birth-rate for 1898 was 24·89 and the general death-rate was 17·55 per 1000. The zymotic death-rate was 1·35 per 1000 and the infantile mortality was 156·24 per 1000 registered births.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 5905 births and 4820 deaths were registered during the week ending Dec. 16th. The annual rate of mortality in these towns, which had been 18·9 and 20·8 per 1000 in the two preceding weeks, further rose last week to 22·0. In London the rate was 23·8 per 1000, while it averaged 20·8 in the 32 provincial towns. The lowest death-rates in these towns were 9·6 in Huddersfield, 14·0 in Birkenhead, 14·7 in Derby and 15·8 in West Ham; the highest rates were 25·7 in Preston, 26·5 in Liverpool, 27·5 in Plymouth, and 30·3 in Portsmouth. The 4820 deaths in these towns included 501 which were referred to the principal zymotic diseases, against numbers increasing from 422 to 480 in the four preceding weeks; of these 143 resulted from measles, 124 from diphtheria, 86 from whooping-cough, 49 from "fever" (principally enteric), 43 from diarrhœa, 38 from scarlet fever, and 13 from small-pox. The lowest death-rates from these diseases last week occurred in Croydon, Bristol, Cardiff, Derby, and Sunderland; and the highest rates in Leicester, Preston, Sheffield, and Hull. The greatest mortality from measles occurred in Swansea, Birkenhead, Liverpool, Preston, and Sheffield; from scarlet fever in Bradford; and from whooping-cough in Norwich, Leicester, Salford, and Blackburn. The mortality from "fever" and from diarrhœa showed no marked excess in any of

the large towns. The 124 deaths from diphtheria included 55 in London, 16 in Leeds, 11 in Sheffield, eight in Portsmouth, five in Leicester, and five in Liverpool. 12 fatal cases of small-pox were registered in Hull and one in London, but not one in any other of the 33 towns, and no small-pox patients were under treatment in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, Dec. 16th, was 3084, against numbers decreasing from 3578 to 3290 at the end of the four preceding weeks; 180 new cases were admitted during the week, against 293, 294, and 277 in the three preceding weeks. Influenza was certified as the primary cause of 38 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had increased from 324 to 548 in the four preceding weeks, further rose last week to 646, and were 208 above the corrected average. The causes of 52, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leicester, Salford, Bradford, Leeds, Newcastle, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·5 and 20·0 per 1000 in the two preceding weeks, rose again to 21·5 during the week ending Dec. 9th, but was 0·5 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·2 in Edinburgh and 18·1 in Leith, to 32·5 in Greenock and 35 5 in Perth. The 657 deaths in these towns included 31 which were referred to measles, 18 to whooping-cough, 17 to diarrhœa, seven to scarlet fever, six to "fever," and two to diphtheria. In all 81 deaths resulted from these principal zymotic diseases, against 74 and 69 in the two preceding weeks. These 81 deaths were equal to an annual rate of 2·7 per 1000, which was 0·4 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had decreased from 43 and 28 in the three preceding weeks, rose again to 31 last week, and included 14 in Glasgow, eight in Greenock, six in Paisley, and three in Dundee. The deaths referred to whooping-cough, which had been six and eight in the two preceding weeks, further rose last week, to 18, of which nine occurred in Glasgow, three in Dundee, and three in Perth. The fatal cases of diarrhœa, which had increased from 15 to 20 in the three preceding weeks, declined again to 17 last week, and included five in Glasgow, five in Aberdeen, and four in Dundee. The seven deaths from scarlet fever, three of which were registered in Glasgow, two in Edinburgh, and two in Perth, showed a marked increase upon the numbers in recent weeks. The deaths referred to different forms of "fever," which had been five, seven, and eight in the two preceding weeks, declined again to six last week, and included four in Glasgow and two in Edinburgh. The two fatal cases of diphtheria, both of which were recorded n Glasgow, were considerably below the recent weekly numbers. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 128 to 159 in the three preceding weeks, further rose to 172 last week, and were 40 above the number in the corresponding period of last year. The causes of 22, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 38·6 and 38·5 per 1000 in the two preceding weeks, further declined to 38·2 during the week ending Dec. 16th. During the past four weeks the death-rate in the city has averaged 37·0 per 1000, the rate during the same period being 20·8 in London and 17·2 in Edinburgh. The 256 deaths registered in Dublin during the week under notice were slightly below the number in the preceding week, and included 34 which were referred to the principal zymotic diseases, against numbers decreasing from 72 to 41 in the four preceding weeks; of these, 23 resulted from measles, three from whooping-cough, three from diarrhœa, two from diphtheria, two from "fever," and one from scarlet fever. These 34 deaths were equal to an annual rate of 5·1 per 1000, the zymotic death-rate during the same period being 2·1 in London, and 1·0 in Edinburgh. The fatal cases of measles, which had been 29 and 30 in the two preceding weeks, declined again last week to 23. The three deaths from whooping-cough showed an increase upon the numbers in recent weeks. The fatal cases of diarrhœa, which had been four in each of the two preceding weeks, declined to three last week. The deaths referred to diphtheria, which had been two and three in the two preceding weeks, declined again last week to two. The mortality from "fever" corresponded with that in the preceding week. The 256 deaths in Dublin last week included 30 of infants under one year of age and 53 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons slightly exceeded the number in the preceding week. Nine inquest cases and six deaths from violence were registered, and 87, or more than a third, of the deaths occurred in public institutions. The causes of 14, or nearly 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1899.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during November in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 12·6 per 1000 of the population, estimated at 4,546,752 persons in the middle of this year. In the three preceding months the rates had been 8·6, 11·2, and 14·4 respectively. The rates were considerably below the average in St. George Hanover-square, Westminster, St. Martin-in-the Fields, Strand, City of London, and St. Saviour Southwark; while they showed the largest excess in Fulham, Limehouse, Bermondsey, Rotherhithe, Lewisham, and Plumstead sanitary areas. One case of small-pox was notified in London during November, in Poplar sanitary area; and one small-pox patient was admitted into the Metropolitan Asylums Hospitals, and remained under treatment at the end of the month. The prevalence of scarlet fever showed a marked decline from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Hampstead, Stoke Newington, Limehouse, Greenwich, Lewisham, and Plumstead. The Metropolitan Asylums Hospitals contained 3343 scarlet fever patients at the end of November, against 2493, 2836, and 3406 at the end of the three preceding months; the weekly admissions averaged 304, against 244, 342, and 426 in the three preceding months. The prevalence of diphtheria showed a slight diminution from that recorded in the preceding month; this disease was proportionally most prevalent in Fulham, Mile End Old Town, Bermondsey, Rotherhithe, Camberwell, and Lewisham sanitary areas. There were 1718 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of November, against 1493, 1479, and 1687 at the end of the three preceding months; the weekly admissions averaged 227, against 179, 210, and 258 in the three preceding months. The prevalence of enteric fever in London was greatly in excess of that recorded in any month during recent years; among the various sanitary areas this disease showed the highest proportional prevalence in St. James Westminster, Shoreditch, Bethnal Green, Limehouse, Mile End Old Town, and Poplar. The Metropolitan Asylums Hospitals contained 460 enteric fever patients at the end of November, against 213, 252, and 341 at the end of the three preceding months; the weekly admissions averaged 76, against 37, 41, and 58 in the three preceding months. Erysipelas was proportionally most prevalent in Holborn, Clerkenwell, Shoreditch, Newington, Rotherhithe, and Plumstead sanitary areas. The 39 cases of puerperal fever included seven in Islington, six in Camberwell, five in Lambeth, three in St. George-in-the-East, three in Poplar, and three in Greenwich sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1899.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1899.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.												
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	4,546,752	1	2080	1585	1	1046	9	39	727	—	5488	12·6	—	191	48	257	64	—	185	—	71	816	1·9	7680	17·6	134
West Districts.																									
Paddington	128,794	—	40	23	—	20	—	1	16	—	100	8·1	—	1	1	6	—	—	3	—	1	12	1·0	153	12·4	81
Kensington	172,899	—	63	35	—	15	3	—	32	—	148	8·9	—	1	2	10	—	—	1	—	2	16	1·0	257	15·5	117
Hammersmith	108,785	—	34	27	—	28	—	1	13	—	103	9·9	—	—	1	3	—	—	6	—	—	10	1·0	173	16·6	132
Fulham	130,720	—	75	74	—	32	—	1	26	—	208	16·6	—	24	1	8	5	—	9	—	1	48	3·8	216	17·2	153
Chelsea	96,721	—	34	17	—	17	—	—	12	—	80	8·6	—	3	1	3	1	—	3	—	6	17	1·8	150	16·2	129
St. George Hanover-square	80,876	—	22	11	—	8	—	—	5	—	46	5·9	—	2	1	1	2	—	—	—	2	8	1·0	88	11·3	120
Westminster	52,117	—	21	1	—	8	—	—	7	—	37	7·4	—	2	—	1	1	—	1	—	1	6	1·2	90	18·0	202
St. James Westminster	21,827	—	3	11	—	8	—	—	1	—	23	11·0	—	1	—	1	—	—	1	—	—	3	1·4	29	13·9	98
North Districts.																									
Marylebone	140,139	—	44	32	—	25	1	—	20	—	122	9·1	—	—	1	5	—	—	4	—	1	11	0·8	195	14·5	92
Hampstead	80,252	—	58	11	—	13	—	—	9	—	91	11·8	—	—	1	2	1	—	1	—	—	5	0·6	79	10·3	114
St. Pancras	244,548	—	62	75	—	67	—	2	31	—	237	10·1	—	1	—	20	3	—	10	—	2	36	1·5	455	19·4	160
Islington	348,085	—	170	93	—	70	—	7	62	—	402	12·0	—	13	10	21	6	—	13	—	5	68	2·0	565	16·9	127
Stoke Newington	35,187	—	36	5	—	4	—	—	3	—	48	14·2	—	1	—	—	—	—	1	—	—	2	0·6	33	9·8	34
Hackney	222,571	—	94	100	—	55	1	—	34	—	284	13·3	—	2	1	13	4	—	8	—	3	31	1·5	338	15·8	127
Central Districts.																									
St. Giles	37,196	—	10	5	—	6	—	—	7	—	28	7·9	—	5	—	1	—	—	—	—	1	7	2·0	65	18·2	50
St. Martin-in-the-Fields	12,142	—	1	1	—	3	—	—	2	—	7	6·0	—	2	—	—	—	—	1	—	1	4	3·4	20	17·2	154
Strand	23,016	—	5	5	—	4	—	—	3	—	17	7·7	—	—	—	1	—	—	—	—	1	2	0·9	50	22·6	255
Holborn	29,621	—	15	6	—	5	—	—	8	—	34	12·0	—	—	1	—	—	—	2	—	1	4	1·4	59	20·8	219
Clerkenwell	66,068	—	35	18	—	13	—	1	16	—	83	13·1	—	—	3	4	2	—	6	—	—	15	2·4	133	21·0	139
St. Luke	40,868	—	19	14	—	2	—	—	9	—	44	11·2	—	—	3	3	—	—	—	—	2	8	2·0	102	26·0	143
City of London	27,986	—	3	8	—	6	—	—	3	—	20	7·5	—	—	—	1	—	—	2	—	—	3	1·1	59	22·0	85
East Districts.																									
Shoreditch	121,071	—	38	30	—	42	—	1	29	—	140	12·1	—	12	1	6	3	—	5	—	2	29	2·5	249	21·4	170
Bethnal Green	128,938	—	42	44	—	66	—	1	27	—	180	14·6	—	8	—	10	5	—	11	—	3	37	3·0	280	22·6	186
Whitechapel	81,391	—	18	26	1	20	—	2	14	—	81	10·4	—	5	—	4	1	—	3	—	4	17	2·2	159	20·4	110
St. George-in-the-East	48,560	—	13	1	—	14	—	3	10	—	41	8·8	—	1	—	—	1	—	1	—	—	3	0·6	101	21·7	177
Limehouse	58,807	—	36	11	—	43	—	—	7	—	97	17·2	—	—	—	3	3	—	8	—	1	15	2·7	147	26·1	184
Mile End Old Town	113,161	—	45	57	—	51	2	—	14	—	169	15·6	—	4	1	11	—	—	12	—	1	29	2·7	247	22·8	118
Poplar	170,606	1	57	40	—	81	—	3	26	—	208	12·7	—	5	1	11	10	—	11	—	4	42	2·6	354	21·6	140
South Districts.																									
St. Saviour Southwark	24,207	—	3	7	—	2	—	—	3	—	15	6·5	—	2	—	1	—	—	—	—	2	5	2·2	54	23·3	246
St. George Southwark	60,536	—	31	26	—	10	—	—	11	—	78	13·4	—	9	1	3	—	—	4	—	2	19	3·3	145	25·0	144
Newington	124,166	—	58	49	—	22	—	—	28	—	157	13·2	—	5	2	8	—	—	3	—	1	19	1·6	261	21·9	147
St. Olave Southwark	11,098	—	4	4	—	1	—	—	—	—	9	8·5	—	1	—	—	—	—	—	—	—	1	0·9	33	31·0	200
Bermondsey	85,835	—	44	59	—	29	—	—	18	—	150	18·2	—	11	1	11	—	—	5	—	1	29	3·5	205	24·9	189
Rotherhithe	41,050	—	21	36	—	11	—	—	11	—	79	20·1	—	3	1	4	—	—	3	—	2	13	3·3	70	17·8	76
Lambeth	308,108	—	131	148	—	54	1	5	35	—	374	12·7	—	10	3	13	3	—	10	—	5	44	1·5	438	14·8	111
Battersea	174,996	—	104	51	—	40	—	1	31	—	227	13·5	—	28	3	7	5	—	12	—	—	55	3·3	279	16·6	117
Wandsworth	209,655	—	99	72	—	26	1	1	39	—	238	11·8	—	18	1	8	1	—	3	—	4	35	1·7	290	14·4	108
Camberwell	264,817	—	128	157	—	51	—	6	41	—	383	15·1	—	6	1	27	1	—	8	—	1	44	1·7	433	17·1	146
Greenwich	182,513	—	146	68	—	43	—	3	28	—	288	16·5	—	5	3	7	5	—	10	—	2	32	1·8	300	17·1	137
Lewisham (excluding Penge)	91,027	—	119	74	—	11	—	—	10	—	214	24·5	—	—	1	12	1	—	2	—	1	17	1·9	127	14·5	140
Woolwich	41,542	—	11	18	—	6	—	—	6	—	41	10·3	—	—	—	2	—	—	2	—	2	6	1·5	77	19·3	209
Lee	40,219	—	17	17	—	4	—	—	5	—	43	11·2	—	—	—	1	—	—	—	—	1	2	0·5	51	13·2	120
Plumstead	64,031	—	71	17	—	6	—	—	15	—	109	17·8	—	—	1	4	—	—	—	—	2	7	1·1	71	11·6	68
Port of London	—	—	—	1	—	4	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 45 cases of membranous croup.

† Including deaths from membranous croup.

the five weeks ending Dec. 2nd the deaths of 7630 persons belonging to London were registered, equal to an annual rate of 17·6 per 1000, against 23·6, 18·7, and 18·5 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 9·8 in Stoke Newington, 10·3 in Hampstead, 11·3 in St. George Hanover-square, 11·6 in Plumstead, 12·4 in Paddington, and 13·2 in Lee; the highest rates were 23·3 in St. Saviour Southwark, 24·9 in Bermondsey, 25·0 in St. George Southwark, 26·0 in St. Luke, 26·1 in Limehouse, and 31·0 in St. Olave Southwark. During the five weeks of November 816 deaths were referred to the principal zymotic diseases in London; of these, 191 resulted from measles, 48 from scarlet fever, 257 from diphtheria, 64 from whooping-cough, 185 from enteric fever, 71 from diarrhœa, and not one either from small-pox, from typhus, or from any ill-defined form of continued fever. These 816 deaths were equal to an annual rate of 1·9 per 1000, against 6·5, 3·4, and 1·8 in the three preceding months. The lowest death-rates from these diseases last month were recorded in Hampstead, Marylebone, Stoke Newington, Strand, St. George-in-the-East, St. Olave Southwark, and Lee; and the highest rates in Fulham, St. Martin-in-the-Fields, St. George Southwark, Bermondsey, Rotherhithe, and Battersea sanitary areas. The 191 deaths referred to measles were considerably below the average number in the corresponding periods of the 10 preceding years; this disease was proportionally most fatal in Fulham, St. Giles, St. Martin-in-the-Fields, St. George Southwark, Bermondsey, and Battersea sanitary areas. The 48 fatal cases of scarlet fever were less than one-half of the corrected average number; this disease showed the highest proportional fatality in Islington, Holborn, Clerkenwell, St. Luke, and Rotherhithe sanitary areas. The 257 deaths from diphtheria were equal to the average number in the corresponding periods of the 10 preceding years; among the various sanitary areas this disease was proportionally most fatal in St. Pancras, Mile End Old Town, Bermondsey, Rotherhithe, Camberwell, and Lewisham. The 64 fatal cases of whooping-cough were 72 below the corrected average number; this disease showed the highest proportional fatality in Fulham, Clerkenwell, Bethnal Green, Limehouse, Poplar, and Battersea sanitary areas. The 185 deaths from enteric fever showed an excess of 88 over the corrected average number; among the various sanitary areas this disease was proportionally most fatal in St. Martin-in-the-Fields, Clerkenwell, Bethnal Green, Limehouse, Mile End Old Town, and Rotherhithe. The 71 fatal cases of diarrhœa were considerably below the average; this disease showed the highest proportional fatality in Chelsea, St. Martin-in-the-Fields, St. Luke, Whitechapel, St. Saviour Southwark, and Rotherhithe sanitary areas. In conclusion, it may be stated that the aggregate mortality in London during November from these principal zymotic diseases was nearly 13 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to births registered, was equal to 134 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in Paddington, Stoke Newington, St. Giles, City of London, Rotherhithe, and Plumstead; and the highest rates in Westminster, Strand, Holborn, St. Saviour Southwark, St. Olave Southwark, and Woolwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: J. C. Rowan to the *Pembroke;* A. R. H. Skey to the *Excellent;* and P. H. Bannister, lent to the *Medea*.

ROYAL ARMY MEDICAL CORPS.

Major F. R. Barker is held in readiness for service in South Africa. Lieutenant-Colonel R. Drury is posted to the Dublin District for duty. Surgeon-Lieutenant-Colonel W. Campbell, r.p., has been recalled for duty at the Guards' Depôt at Caterham. Major H. A. Cummins holds himself in readiness for service in South Africa. Captain R. C. Lewis is posted to the Cork District for duty on arrival home from India.

The following notification is substituted for that which appeared in the *London Gazette* of Dec. 5th, 1899:—Major Robert N. Buist, from half-pay, to be Major, with precedence next below Major R. Holyoake, vice E. W. Gray, killed in action. The undermentioned officers, from the Seconded List, to be Captains: Captain George S. McLoughlin, D.S.O., vice W. Hallaran, promoted. Captain John D. Ferguson, D.S.O., vice T. Birt, promoted. The undermentioned Surgeons on probation to be Lieutenants: Frederick Hallard Merry, Henry Charles Rupert Hime, Charles Chevin Cumming, Wilfred Montagu McLoughlin, James Andrew Hartignan, James Fitzgerald Martin, Edmund McDonnell, Charles Seaver Smith, Arthur Hunt Safford, Angus Joseph Macnab Cuddon-Fletcher, Arthur Farrington Carlyon, James Martin Buist, Robert Longfield Davies, Charles Stanley Cato, Charles Robert Evans, and William Chapman Croly.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotions among the officers of the Indian Medical Service:—Captains to be Majors: *Bengal Establishment:* Albert Ernest Robertson, David Macdonald Davidson, Frederic Pensent Maynard, John Charles Lamont, Arthur Holbrook Nott, Albert Coleman, William Westropp White, Daniel Thomas Lane, Robert Charles Macwatt, William Henry Edward Woodwright, Walter James Buchanan, and Joseph Kinnear Close. *Madras Establishment:* Frederick Joseph Dewes, Joseph Orphino Pinto, Percy Charles Hutchison Strickland, and Thomas William Stewart. *Bombay Establishment:* John Lloyd Thomas Jones and William Ernest Jennings. Her Majesty has also approved of the retirement of the undermentioned officers: *Bengal Establishment:* Lieutenant-Colonel William Henry Gregg, Lieutenant-Colonel Russick Lall Dutt, and Lieutenant-Colonel James Armstrong. The Queen has approved of the transfer to the Half-pay List of Captain Albert Edwin Hayward Pinch, Bengal Establishment.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant-Colonel W. Collingridge resigns his commission, with permission to retain his rank and to wear the uniform of the Corps on his retirement.

VOLUNTEER CORPS.

Artillery: 1st Gloucestershire: The undermentioned Surgeon-Captains to be Surgeon-Majors: J. H. Wathen and D. S. Davies. *Royal Engineers:* 1st Lanarkshire: Surgeon-Lieutenant R. O. Adamson to be Surgeon-Captain. *Rifle:* 2nd Volunteer Battalion the Gloucestershire Regiment: Surgeon-Lieutenant M. A. Cooke to be Surgeon-Captain. 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Lieutenant George Frederic Morley resigns his commission and is appointed Surgeon-Lieutenant. 1st London: Hugh Brooming Taylor Morgan to be Surgeon-Lieutenant. 7th Middlesex (London Scottish): Surgeon-Lieutenant J. Cantlie to be Surgeon-Captain.

VOLUNTEER INFANTRY BRIGADE.

Sussex: Surgeon-Major C. Boyce, 1st Volunteer Battalion the Queen's Own (Royal West Kent Regiment), to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade.

A CIVIL HOSPITAL UNDER NAVAL MEDICAL CONTROL.

The important town of Rochefort in France possesses a civil as well as a naval hospital, and in each establishment the staff—administrative and executive—consists exclusively of naval medical officers on full pay. Writing in the *Archives de Médecine Navale* for October Dr. Fontorbe lays stress on the great advantages accruing to all concerned from this unique arrangement. Not only do the sick and suffering poor people of Rochefort obtain relief at the hands of highly instructed medical men, but the latter on their side derive enormous benefit from the large amount of practice thus afforded them. Already thoroughly proficient in the theory of their profession what they require is the opportunity of rounding off their knowledge practically, while at the same time they are given the chance of becoming familiar with many diseases and affections which they would never be likely to encounter among healthy men in the prime of life. Except on active service naval and military medical officers are seldom called on to perform operations, but in civil hospitals these are of daily occurrence. It might, perhaps, be urged that the experience acquired

in many of the latter—such, for example, as operations on the uterus and ovaries—would not be of much value to a surgeon whose duty as a rule lies with adult males, but the objection is entirely ungrounded. All major operations are instructive. The operator cannot but gain inestimable knowledge with regard to many most important matters. The proper handling of a knife can only be perfectly acquired by practice, and the same may be said of the coolness and steadiness that are so essential in emergencies. During the first half of the present year 71 operations were performed in the naval hospital at Rochefort and 120 in the civil hospital, the average being thus upwards of one per diem. In the civil hospital 63 of the subjects were males and 57 females. Among the former there were two deaths and among the latter three. No deaths occurred among those operated upon in the military hospital. Dr. Fontorbe gives a detailed list of all the operations, which included 21 laparotomies.

TRANSVAAL WAR NOTES.

The following medical officers of the Royal Navy are at present serving with the naval detachments landed for service in South Africa—viz.: Fleet Surgeon J. Porter of H.M. flagship *Doris*, Surgeon J. G. Fowler, H.M.S. *Powerful*, and Surgeon E. P. Mourilyan of the *Doris*.

Major Tuckey, R.A.M.C., has left in the *Gascon* for South Africa. Civil Surgeons A. E. Brown and L. Cooper have sailed in the *Avoca* in medical charge of the troops.

The Earl and Countess Carrington have offered to place Hill Farm House, High Wycombe, at the disposal of the military authorities should the proposal to provide more convalescent homes for sick soldiers discharged from military hospitals be put into practice.

With regard to the Queen's gift of chocolate to the troops it has been said in the press that one firm was to supply 40,000 tins of chocolate to the South African Field Force and two firms 30,000 each. We are asked to state that the Bristol firm, Messrs. J. S. Fry and Sons, Limited, Her Majesty's Royal Warrant holders, are supplying 40,000 tins.

The London Perfumery Co. are prepared to send out a case containing from 40 to 50 bottles (assorted) of any of their preparations and articles of manufacture at the price of £2 10*s.* to ambulance corps and field hospitals for use in South Africa.

The following medical officers have been appointed to the staff of the 7th Division: Principal Medical Officer, Lieutenant-Colonel J. A. Gormley, R.A.M.C., Medical Officer, Major F. J. Morgan, R.A.M.C.

MEDICAL APPOINTMENTS FOR CIVILIANS IN SOUTH AFRICA.

We are constantly receiving letters from correspondents anxious to serve in a medical capacity in South Africa asking how they should proceed and what are the necessary qualifications. We are authorised to say that, in the first place, application must be made to the Director-General of the Army Medical Department, 18, Victoria-street, London, S.W. No one will be sent to South Africa who is over 35 years of age and preference will be given to men who have recently completed a term of office as house surgeon in a big hospital. What is wanted is a young energetic man who has held a responsible position and consequently can think for himself, but one at the same time who is willing to do what he is told. Other things being equal, a man who can ride and is able to rough it is better than a man who does not possess these qualifications. Applications will all be considered, but we would remind intending applicants that there are already over 400 names on the list for service.

DEATHS IN THE SERVICES.

Colonel John Henry Hughes, R.A.M.C., principal medical officer at Quetta, recently in India. He joined the army in 1864, became surgeon in 1873, surgeon-major in 1876, and deputy surgeon-general in 1895. He served with the Second Field Hospital during the Ashanti War, 1873–74 (medal with clasp).

CASUALTIES IN THE TRANSVAAL WAR.

At the battle on the Tugela Captain M. L. Hughes, R.A.M.C., killed (an obituary notice will be found in another column); Major F. A. Bracington (? J. H. Brannigan), R.A.M.C., wounded slightly; and at the Battle of Magersfontein Lieutenant Douglas, R.A.M.C., wounded, and Major C. H. Burtchaell, R.A.M.C., taken prisoner.

The Secretary of State for War has approved of the period of leave out of India granted to executive officers of the Royal Army Medical Corps on medical certificate during a tour of service being allowed to count towards the completion of such tour up to a maximum of 12 months.

Correspondence.

"Audi alteram partem."

THE WORKMEN'S COMPENSATION ACT, 1897.

To the Editors of THE LANCET.

SIRS,—In my paper dealing with this Act from a medical point of view, which appeared in THE LANCET of Sept. 30th last, I pointed out the serious consequences, both to employers and to workmen, if the disability arising from pre-existing disease was not differentiated from the disability proceeding directly from accidental injury. On the 2nd of this month the Court of Appeal (A. L. Smith, Collins, and Vaughan Williams, L.JJ.) unanimously gave a judgment which must have very far-reaching consequences—consequences which were never contemplated by the framers of the Act.

In Lloyd *v.* Sugg and Co., Limited, the facts were briefly as follows. George Lloyd, a smith in the employ of Messrs. Sugg and Co., was at the time of the accident holding a flatter on an anvil for another workman, a hammerer, to strike the end of the flatter. The hammerer by accident struck the rod of the flatter and Lloyd's hand was jarred but not otherwise injured. The medical man who attended Lloyd was called as a witness and said that he had previously to the accident treated Lloyd for gout in the hand and elbow and that Lloyd had the gouty diathesis—the swollen hand was caused by gout brought on by the jar—and that Lloyd was suffering from a weak hand caused partially by the injury. The case therefore was clear; the injury would no doubt have been trivial if it had occurred to a healthy man but was rendered serious by the pre-existing disease Lloyd suffered from. The Court of Appeal decided in favour of the workman, Lord Justice Collins ruling that the question of pre-existing disease was not to be taken into consideration in assessing under the Act disability after accidental injury, for he said—

> It was urged that the injury supervening upon the jar would not have been nearly so great had it not been for the gout. That seemed to him to be immaterial. There was the accident and the consequent injury and the extent of the injury must depend upon the condition or the constitution of the person injured at the time of the accident. The principle always followed in cases where compensation had to be assessed for personal injuries caused by negligence, so far as related to the causes contributing to the disability, must be applied in cases under the Act of 1897. Take, for instance, the case of a delicate lady receiving a shock in a railway accident; the injury would be much greater to her than in the case of a lady in perfect health. In each case the court had to deal with the then existing condition to arrive at the ultimate result.

Employers are now, therefore, face to face with the very serious question originally raised by THE LANCET in an editorial article early in this year, and they will either have to insist on the periodical medical examination of their workmen or to make up their minds to pay heavily for the pre-existing disease or weakly constitutional condition of any one of their workmen who may meet with the slightest and most trivial accidental injury. If the former the consequences to the working classes throughout the country and to the community at large will be disastrous, for all persons of impaired physique will be thrown out of employment and will become a burden to the rates; if the latter insurance rates must be largely raised and the trade of the country seriously handicapped. A large number of medical men in their capacity as medical officers to manufactories and works are the confidential advisers of employers, and a larger number still are the medical officers of workmen's benefit societies and unions. They will no doubt be consulted upon the position of affairs, and if it appears to them that both in the interest of employers and their workmen the Act of 1897 should be amended in the matter of the influence of pre-existing disease on the assessment of disability, and the influence of the profession is exerted, there can be no doubt of the result before any long period of time has elapsed.

I am, Sirs, yours faithfully,

ALBERT BENTHALL, F.R.C.P.Edin., &c.

Cockspur-street, Pall all, S.W., 1899.

"THE CONDUCT OF SANITARY INSPECTORS IMPUGNED."

To the Editors of THE LANCET.

SIRS,—We, the undersigned sanitary inspectors for the Vestry of Chelsea, having read the article in the *Daily Mail* of Dec. 9th on the "alleged blackmail by sanitary inspectors," subsequently copied by your valuable journal, beg to ask for the most searching inquiry into the whole statement.

The writer of the article says there is perhaps *one* honest inspector in 50. As there are about 200 inspectors in London there is ample margin given to substantiate the assertion of dishonesty, and if it can be proved that the statement is true even to the extent of one "*dis*honest inspector in 50 we think you will be doing a public duty in exposing this alleged dishonesty. We would urge you not to let this matter rest now that you have helped make the statement public until a thorough investigation has taken place, and either the 196 alleged dishonest inspectors in London have been removed from office and dealt with under the Bribes Act or the statement withdrawn.

It cannot be denied that the lives of thousands depend on receiving a pure milk-supply, and as all milk vendors in London are registered there should be no difficulty in substantiating the statements that cheques and post-cards pass at least twice yearly between milk retailer and inspectors. We have counted the number of milk retailers in Chelsea and find they amount to about 150, so that if any post-cards and cheques do exist there should be no difficulty in finding a few here. We shall be very pleased to assist you in any steps you may think fit to take to arrive at the true state of affairs. We remain, Sirs, yours faithfully,

ALEXR. GRANT (Chief).
JAMES W. KING.
WM. THORPE.
GEO. R. METZLER.

Public Health Department, Town Hall, Chelsea, Dec. 19th, 1899.

THE MEDICAL DEFENCE UNION AND THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

To the Editors of THE LANCET.

SIRS,—The publication in your columns by the council of the Medical Protection Society of the fact that recent attempts to effect amalgamation of the two defence societies have again failed will cause some disappointment to those members of both societies who think amalgamation desirable and who perhaps do not realise the difficulties which exist. There is no need to attribute this failure to ill-will on either side; the failure is due to the fact that no one has yet been able to devise a scheme which will satisfy the legitimate requirements of those who are responsible for safeguarding the interests of each society; and neither society, it appears to me, should feel offended if proposals made by it prove not to be acceptable to the other so long as their proposals have received adequate consideration.

The offer of arbitration is the subject of the letter to our council published by Dr. Hugh Woods and received the fullest consideration by the executive officers and finally by the council. From this letter we inferred that the council of the Medical Protection Society was prepared to leave everything to what may rightly be called the "chances" of arbitration; that there was no one point considered by them to be of such importance to the interests of their society that they wished to reserve it from these chances. Our council held a different view and was not prepared to risk every point which was considered crucial and of the greatest importance to the welfare of our society to such uncertain chances, and decided that they were unable to accept the proposal.

If you will be so good as to publish this statement I think it may help to allay the irritation which seems to be inseparably attached to collective negotiations on this subject and serve to convince the members of both societies that the wisest course under the circumstances is for each to develop to the best of its power its resources for the benefit of its members, and for each to continue in friendly rivalry, endeavouring to excel the other in its efforts for the good of the profession, until at some future time perhaps the only practicable solution, as it appears to me, takes place—namely, that one society, acting on the belief that it was to the interest of the profession to do so, winds up its affairs and merges into the other. Each society is too independent and successful at the present time for this to be likely to occur; in the meantime let us regard each other collectively as we do individually, with the consideration and good feeling which we deserve for the valuable work we are doing willingly and gratuitously for our professional brethren and which is known as medical defence.

May I take this opportunity of expressing the high appreciation which is felt by all for the practical interest which you take in the matter and the generous offer you made in connexion with it?

I am, Sirs, yours faithfully,

WALTER S. A. GRIFFITH,
President of the Medical Defence Union.

Dec. 18th, 1899.

DR. LOMBE ATTHILL AND THE APOTHECARIES' HALL OF DUBLIN.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 16th you publish a vote of censure passed on me by the governor and directors of the Apothecaries' Hall of Dublin in which they denounce the course I adopted in expressing the views held by the President and Fellows of the Royal College of Physicians of Ireland at the recent meeting of the General Medical Council as "most unprofessional, totally uncalled for, and highly discreditable" to me. I observe, however, that they do not deny the truth of my statements.

As my speech has not been published these gentleman must have derived their information from a one-sided and necessarily imperfect source; indeed, I am of opinion, had they been more perfectly informed as to the merits of the case, that the resolution would have been modified. Did the matter concern myself alone I should not have thought of noticing it, but as I expressed the views of the President and Fellows of the Royal College of Physicians of Ireland, whom I represent on the Council, it is but right that the facts of the case should have the same publicity as was given to the resolution of the Apothecaries' Hall. Personally I was, after the passing of the Act of 1888, in favour of admitting examiners appointed by the Apothecaries' Hall of Dublin to take part in the conjoint examination about to be conducted by the Royal College of Physicians and Royal College of Surgeons of Ireland and I moved a resolution to that effect, and it was not till revelations were made in the General Medical Council in 1895, which ended in the examinations conducted by the Apothecaries' Hall of Dublin and the College of Surgeons jointly being reported to the Privy Council and being discontinued, that I saw reason to alter my opinion.

At the recent meeting of the General Medical Council Mr. Brown moved two resolutions, one approving the establishment of an examining board for England to include the Apothecaries' Hall of London; the other, that steps be taken to try to establish a similar board for Ireland, to include the two Royal Colleges and the Apothecaries' Hall of Dublin, and he called on me to give the reasons why the College of Physicians continued to refuse to agree to such, and I felt bound to do so. Capital having been made of the fact that the first of Mr. Brown's resolutions had been carried by a majority, though small, I in my statement in the first instance pointed out that there was no analogy between the two bodies referred to, and that (*a*) the Apothecaries' Society of London was constituted a corporate body by the name of the "Society of Apothecaries of London." The Dublin body were created by the Act 40, Geo. III., C. 35, to raise a fund to erect a hall for the purpose of preparing "medicines of the purest quality under the inspection of persons skilled in the art and mystery of an apothecary" and to protect the public from the "frauds and abuses practised by ignorant and unskilful persons pretending to the art of an apothecary to the injury of the fair trader, the disappointment of the physician, and hazard of life." (*b*) The London Society had powers to appoint a court of examiners to "ascertain the skill and abilities of such persons *in the science and practice of medicine* and their fitness to practice as an apothecary." The powers conferred on the Dublin Hall are that "no person shall open

shop or act in the art and mystery of an apothecary in Ireland until he shall have been examined as to his qualification and knowledge of *the business*" by "the governor, deputy governor, and directors of the Apothecaries' Hall of Dublin." The Dublin Hall had no powers given to appoint any examiners other than those named above or to examine in medicine as the London Society has. (*c*) The London Society has power to inspect apothecaries' shops and inflict fines; the Dublin Hall has not that responsible duty entrusted to it; that was imposed on the College of Physicians of Ireland and was regularly performed by it up to the date of the passing of the Act consituting the Pharmaceutical Society of Ireland. (*d*) A candidate rejected by the Dublin Hall can appeal to the College of Physicians; this right has been repeatedly exercised. No such supervision is conferred on the Royal College of Physicians of London. With respect to the London Hall, the President and Fellows of my College held, when the subject of admitting the Dublin Hall to participate with College of Surgeons in forming with them a conjoint examining board was under discussion, that the fact of the Hall being subordinated to the College in these and other matters by the provisions of the Apothecaries' Act (Ireland), specially with respect to the right of appeal in the case of a rejected candidate, rendered it inexpedient to agree to such a combination.

Further, there was a legal difficulty as to the fee for the joint Licences; the Apothecaries' Hall of Dublin is bound by the Act to charge "the sum of ten shillings and no more" for its certificate. That sum would not pay the cost of the examination, but if the Hall charged a larger sum the College would be conniving at an illegal act; further, candidates would have objected to pay such for a Licence very few desired to hold and the great majority refused to go in for. There was, further, a legal difficulty with regard to the provisions of the Apothecaries' Act. By it the governor and directors of the Hall are bound to enforce an apprenticeship of seven years on all candidates for their Licence. As a matter of fact, they have allowed this to fall into abeyance, but the College of Physicians could not be a party to any evasion of the law. These were the reasons which in 1889 mainly influenced the President and Fellows to decide not to agree to admit the Apothecaries' Hall of Dublin to take part in the scheme for the establishment of an examining board under the provision of the Act of 1888, and all these still exist. Further, I stated that since 1889 matters of public notoriety had occurred with reference to the Apothecaries' Hall which had confirmed the College as to the correctness of its decision. The Apothecaries' Hall of Dublin was established by the Legislature solely with the view of protecting the public from the injury which follows the use of impure or adulterated drugs, and it was the duty of the board of directors to prevent the sale of such in Ireland; but instead of doing so, and while admitting that "drug contracting in Ireland to be in about as corrupt a state as possible and a matter of disgrace to public bodies," it is openly stated by the *Medical Press and Circular*—and the statement has not been contradicted—that "the Apothecaries' Hall of Dublin has descended from its high estate to join in the discreditable scramble for union contracts, adopting the same tactics as the rest of the commercial crowd who fatten at the expense of the ratepayers and the sick poor," and after comparing the gross price of 74 articles which would be supplied by an English firm with the price offered by the Apothecaries' Hall of Dublin it adds: "We are obliged to conclude that the 'Hall' has entered the lists as one of the ruck of drug traders who deal with boards of guardians and is willing to adopt their methods. We do not know that we could say anything worse" (*vide* Supplement *Medical Press and Circular*, Sept. 23rd, 1896).

I read extracts from this article to the Council and it was having these in my mind that I concluded by saying that, in my opinion, the Apothecaries' Hall of Dublin was not a body any of the medical corporations having due regard to its reputation ought to combine. That opinion I cannot alter. I leave it to your readers to decide if I should do so and whether my conduct in stating the views of the College I represent when called on to show cause why we refuse to join with them is "most unprofessional, totally uncalled for, and highly discreditable" to me. I am willing to abide by the verdict of my profession.

I am, Sirs, yours faithfully,

Dec. 18th, 1899. LOMBE ATTHILL, M.D. Dub.

SUBCUTANEOUS INJECTIONS OF MORPHINE FOR WOUNDED MEN.

To the Editors of THE LANCET.

SIRS,—The utility of morphine injections in saving suffering during the removal of wounded men seems so obvious that you may think it unnecessary to insert this letter, but some years ago I was a good deal struck by the account given me by my friend Professor Birz of Bonn of the use which he made of subcutaneous injections in the Franco-German war while engaged in superintending the removal of the wounded. He went about armed with a bottle of morphine solution and a hypodermic syringe, and before a man was removed he gave him a subcutaneous injection which put the man to sleep, prevented any pain during removal, and lessened shock, so that the patient was in a better condition for operation when he arrived at the hospital in the rear. It sometimes happens that measures of treatment which are perfectly obvious may occasionally, under the stress of circumstances, slip from an operator's mind, and I think it worth while to trouble you with this letter on the bare possibility of preventing pain from such cause.

I am, Sirs, yours faithfully,

Stratford-place, W., Dec. 14th, 1899. T. LAUDER BRUNTON.

A QUESTION OF LUNACY FEES.

To the Editors of THE LANCET.

SIRS,—I have recently had a difference with the Chertsey guardians in reference to the payment of fees for the certifying of lunatics and I should be very glad of your opinion in the matter. I was asked some while ago by the relieving officer if I would attend at the union on a certain date in order to certify seven cases of lunacy. I am not a parish doctor and was called in in a private capacity. I certified the cases in due course and was afterwards informed that the guardians had decided to pay me half a guinea for each case. This I would not accept as I should never dream of certifying for less than a guinea and that is little enough for such responsibility. They, however, refuse to pay more because they were all certified at the same time and tell me I have my remedy. I may say that I entered into no contract beforehand and the question of fee was never mentioned. I should be most glad of your opinion in the matter as I think it is of great importance to the profession.

I am, Sirs, yours faithfully,

J. L. ALLEN HOPE, M.R.C.S.Eng., L.R.C.P. Lond.

*** Our correspondent should approach the Justice who was concerned in the certifying of these cases. The amount of fee payable to a medical man in these circumstances is left by statute entirely to the discretion of the Justice, and the guardians have no option but to pay whatever sum he makes the order for. The fee usually ordered by the Justice varies from half-a-guinea to two guineas. It is only fixed as low as half-a-guinea where the certifying medical man is the medical officer of the workhouse and he sees the case in the course of his daily visits and as part of his daily routine at the workhouse. When an outside medical practitioner is employed who has to make a special visit, sometimes more than one visit, the fee payable is always one or two guineas. The argument advanced of "reduction on taking a quantity" hardly applies in such circumstances because the responsibility in each individual instance is the same however many alleged lunatics there may be. The sum of two guineas is frequently paid to an outside practitioner when there is only one case; and however many cases there are it should not be less than one guinea each.—ED. L.

ACUTE INFECTIVE ARTHRITIS AND CELLULITIS.

To the Editors of THE LANCET.

SIRS,—I wish to draw attention again to the erroneous treatment generally practised in "acute rheumatism," persistence in which I can only attribute to the natural disinclination medical men have in renouncing the dogmas of their clinical masters and book authorities. A most interesting case was published by Dr. D. B. Lees and Dr. F. J. Poynton

in THE LANCET of Oct. 28th (p. 1163), entitled "Virulent Acute Rheumatism with Extensive Purpura; Death from Cardiac Failure," and I strongly recommend all who are interested in the pathology and treatment of this malady to study carefully the history of this case and to pay particular attention to Dr. Poynton's remarks and inferences as to the condition found at the necropsy. I consider that this unfortunate case fully bears out what I have advocated in THE LANCET and other journals during the past three years—viz., that "acute rheumatism" is primarily a joint affection due to some morbid material conveyed by the blood; that this poison, be it germ or ferment, gains admission to the body through the tonsil or other microbial trapdoor; that the joint invasion is promptly followed by a form of acute arthritis and cellulitis with general toxæmia; and furthermore the infected joints serve as incubators where the poison is elaborated and poured into the circulation and through this latter agency conveyed to other articulations—the heart, the pericardium, and the pleura. Having such views I felt it necessary to suggest that the term "acute infective arthritis and cellulitis" be substituted for "acute rheumatism," as the latter in reality was a vague expression with little or no etiological or pathological significance, and that the prefixes "gonorrhœal," "pyæmic," "syphilitic," &c., might be conveniently retained in order to differentiate the arthritis peculiar to each.

The next thing to find out was if there were any analogous affections, and if so, what treatment was most beneficial. Gonorrhœa and pyæmia bore resemblance in many respects, and I found that the only successful treatment for a gonorrhœal or pyæmic joint was immediately to open, irrigate, and drain it. After an experience of 14 consecutive cases I can fearlessly state that similar treatment is a specific *cure* for acute infective arthritis and without in the least wishing to reflect on the treatment practised in Dr. Lees's case I cannot help thinking that if arthrotomy with drainage had been performed on both ankles and left knee on Jan. 17th the result might have been different. At the last meeting of the British Medical Association Sir R. Douglas Powell alluded to the possibility of this disease being an infective one, and needless to say any suggestion coming from such a distinguished authority deserves the serious consideration of specialists and practitioners alike. I have little doubt that before long salicylic acid and its derivatives will be superseded in the majority of cases by a scalpel and drainage tube, which to my mind is the rational treatment of the malady.

I am, Sirs, yours faithfully,
JOHN O'CONOR, M.A., M.D.T.C.D.,
Senior Medical Officer, British Hospital, Buenos Ayres.

THE MEDICAL SERVICE OF REMOTE SCOTLAND.

To the Editors of THE LANCET.

SIRS,—A movement having been set on foot with the object of obtaining the privilege of a paid medical substitute for Scotch parish medical officers in outlying districts of the highlands and islands of Scotland during an annual holiday (such as has already been granted to dispensary officers in the remote districts of Ireland by the Local Government Board of Ireland), any medical officer concerned who desires to support a petition to the Local Government Board of Scotland for this object is requested to send in his name without delay to me.

I am, Sirs, yours faithfully,
J. F. D. MACARA, M.B., C.M. Glasg.,
Parish Medical Officer, Durness, Sutherlandshire, N.B.
Dec. 12th, 1899.

THE TREATMENT OF INFLUENZA.

To the Editors of THE LANCET.

SIRS,—It may be of service to some if I relate my experience of self-treatment for influenza, with a result of stopping the fever in from six to 10 hours. Part of my work at present is at the Military Hospital, Canterbury. There I have a ward which yesterday had 32 soldiers down with influenza. Finding yesterday midday that I was commencing the trouble I began with taking a half-drachm bicarbonate of potassium powder every hour and as soon as I was able (2.30 P.M.) I began mercurial inunction. My plan is this, to smear the thirds of both feet between the toes and the heels with the present British Pharmacopœia unguentum hydrargyri and then to start walking. As I had to continue work until after six o'clock this was no trouble. I kept the socks and shoes (with a layer of thick brown paper over the inner soles to keep the shoes clean) on until bed-time, when I put on a clean pair of socks without removing the mercury, which was washed off this morning. My diet from lunch to bed-time was four basins of bread-and-milk. My highest temperature was 100·2° F. at 7 P.M. Altogether I took seven bicarbonate powders. At bed-time my temperature was only one point above the normal. When in bed I took 10 grains of Dover's powder. I passed a very comfortable night, except for passing water every two or three hours, but I slept comfortably between times. This morning I am as fit as ever, at 8 o'clock eating a good meat breakfast, my temperature being below normal and no constipation.

Quite half-a-dozen times when attacked by influenza I have carried out this treatment with the same results—never being laid up. I am afraid it is hardly a method for private practice. I am, Sirs, yours, faithfully,
Dec. 6th, 1899. PUGIN THORNTON.

TREATMENT OF PUERPERAL SEPTICÆMIA BY PACKING THE BROAD LIGAMENTS WITH GAUZE.

To the Editors of THE LANCET.

SIRS,—In watching severe cases of puerperal septicæmia it has occurred to me that it might be possible to partially isolate the uterus and so minimise absorption by opening and packing each broad ligament with gauze inserted either from the vagina or from above Poupart's ligament. I should prefer the latter. As the pregnant uterus during its enlargement draws up the broad ligaments and with them the peritoneum from the iliac fossæ no great difficulty ought to be experienced in entering the broad ligaments retro-peritoneally from above Poupart's ligaments. To simply curette and irrigate a puerperal uterus acutely infected throughout its whole thickness is next to useless and has resulted in the opposite extreme, hysterectomy, which is advocated by certain American gynæcologists. I can find no reference to this method of treating puerperal septicæmia but feel certain it must have been tried, and I am now writing with the object of ascertaining the views of those surgeons who have had experience of this treatment.

I am, Sirs, yours faithfully,
Plymouth, Dec. 13th, 1899. C. HAMILTON WHITEFORD.

THE "MEDICAL DIRECTORY" FOR 1900.

To the Editors of THE LANCET.

SIRS,—On Dec. 9th, by an extensive fire at our printers, the above work—which was on the eve of completion—was almost entirely destroyed, with the special type used in composing it. We are taking the necessary steps to reprint, and hope, though it will be impossible to keep to the usual time of issue, to publish the volume early in February. Under the exceptional circumstances we trust that we may ask you to insert these few lines. We much regret the inconvenience from which our subscribers may suffer, but we feel confident that we may count upon their indulgence.

We are, Sirs, your obedient servants,
J. AND A. CHURCHILL.
Great Marlborough-street, W., Dec. 13th, 1899.

DISCOMFORTS IN CONNEXION WITH THE JOURNEY TO AND FROM EGYPT.

To the Editors of THE LANCET.

SIRS,—For many years past Egypt has been a favourite resort for invalids of a certain type, more particularly, perhaps, for those suffering from no very obvious signs of illness, who were nevertheless found by their medical advisers to have some point of natural or acquired weakness. The conditions to be found in Egypt were supposed to be an equable climate, abundant sunshine, and dry desert air. It has long been recognised that the evenings constituted a source of danger and all authoritative works on the

climatology of Egypt have called attention to the coolness often prevalent after sunset—a coolness which is probably intensified in its effects by the warmth and sunshine during the day and the consequently free action of the skin. Lately events of a political character have directed fresh attention to Egypt, and it is not unlikely—indeed, it is more than probable—that the immediate effect of this will be an increased number of visitors during the winter months, especially of English visitors. And it is in view of such a possibility that I have felt constrained to direct the attention of the medical profession, and I hope also of the shipping companies, to the grossly inadequate consideration which is given by the responsible authorities to the requirements, indeed the necessities, of patients not in robust health in the matter of travelling.

To get from England in mid-winter to Egypt comfortably and quickly, without wearisome delays and tiresome and uncertain railway journeys, must be acknowledged by everyone to be the *sine quâ non* in order to make Egypt available for invalids, and it may be added that for English invalids English modes of conveyance wherever possible are desirable. Now, at the present time, the Egyptian passenger traffic is apparently treated by the English shipping companies as a mere side issue. Passengers to Egypt have great difficulty in getting there comfortably and certainly, and unless they take the long railway journey to Venice, necessitating the crossing of at least two frontiers, they can only get to Cairo by way of Port Said or Ismailia. The former is undoubtedly a most wearisome and uncomfortable route which no invalid ought to be asked to travel, and the latter is also wearisome and uncertain to a degree, the only set-off being a sight of the Suez Canal. Take my own experience. I left London one morning and embarked the following morning at Marseilles on a Peninsular and Oriental boat, comfortable, expeditious, and well found in every way except that there was no semblance of orderliness in reference to the baggage. Thus, Egyptian baggage was mixed with the Indian baggage, articles marked "Cabin" found their way to the hold, and there was no opportunity of seeing these until Port Said was reached, when they were all brought from the hold just before coaling commenced and many of them were still on deck while that operation was proceeding. That, however, was probably the result of some individual peculiarity in the officer responsible. This ship left Marseilles on Thursday morning, and after a good passage threatened to be in Port Said early on Tuesday morning, which would have allowed Egyptian passengers (of whom there were 70) to catch the 9 o'clock train to Ismailia and so reach Cairo about 5 o'clock on the same afternoon. However, no doubt for some good reason, the speed of the ship for several hours before she reached Port Said (which she eventually did about 11 o'clock) had been perceptibly reduced. The ship was in no hurry, and no thought was given to the fact that it might be more comfortable for the Egyptian passengers to arrive in a strange city—an Oriental city, too—at 5 in the afternoon rather than at 10.30 at night—the only other available time. Of course, the ship was in no hurry, because she had to wait for the mail from Brindisi due at Port Said at midnight on Tuesday. If one happened to have decided, in ignorance of the impending delay at Port Said, to go on to Ismailia he was hardly likely to congratulate himself on his acumen or foresight when he found that the ship did not leave Port Said till 4 on Wednesday morning and only just managed, in this particular instance, to catch the 1 o'clock train from Ismailia which arrives in Cairo at a quarter to 5. But in some other instances the afternoon train has just been missed and the disconsolate passenger has had to make the most of half a dozen weary hours at Ismailia. When the ship happens to reach that port in the night the condition of affairs is really too serious to be regarded merely as an inconvenience. To any but the most robust, arrival there, at that hour, constitutes a grave risk to health.

So much for getting into Egypt. It is almost as difficult very often to get away from it comfortably. Ismailia is easily accessible from Cairo and the agents make sure that the passengers get there in good time—usually to spend a night or part of a night in the hotel. Of course, the nature of things makes it impossible definitely to regulate the time of arrival of a steamer at a point in the middle of the Canal. But it is not necessary almost invariably to get passengers to Ismailia half a dozen hours before the boat. And some of the English boats, for some inscrutable reason, will not embark passengers at Ismailia, but insist on passengers from Cairo going on to Port Said—a wretched journey of 42 miles accomplished nominally in three hours in a sort of steam tramway. The gauge of this is entirely different from that of the line from Cairo to Ismailia, so that all baggage has to be removed, and as it is all carried by the Arab porters one is lucky if much time is not lost. In the writer's case the train due to leave Ismailia for Port Said about 4 in the afternoon left at 6.30 and reached its destination at 9.45 instead of about 7 o'clock. So that a railway journey from Cairo to Port Said of about 120 miles occupied roughly ten hours. Then of course at Port Said there was the unnecessarily early alarm about 5.30 A.M., and passengers hurried on board the boat, which remained calmly at anchor till nearly 11 o'clock.

These, then, are some of the—as I venture to think—quite unnecessary discomforts to which Egyptian visitors are put. They are discomforts and inconveniencies which every medical man who recommends delicate invalids to go to Egypt must recognise and allow for if he sends his patients by what are regarded as the best English boats. It seems to me that it might be to the interest of some English shipping company to consider whether a good service of steamers might not be possible from Marseilles to Alexandria. The journey from London to Marseilles is not so long or wearisome as that to Brindisi and for many other reasons it is probably preferable, and Alexandria is within easy reach of Cairo—about three and a half hours' railway journey—and it would surely not be impossible to get a boat train once a week and so to be independent of the ordinary service. This route would be equally convenient for departure without the wearying uncertainties which the other route presents. There are, of course, boats—those of the Messageries Maritimes and others—which go to Alexandria, but although they are excellent boats they do not commend themselves to English travellers in the way that English boats would.

These are merely suggestions which may have value or not. As to the discomforts of the present journey to Egypt in English boats there cannot be two opinions among those who have tried to get there by the Port Said and Ismailia route. Unless some change is made, and made soon, Egypt will suffer and its magnificent chances for restoring health and affording recreation will not be taken advantage of by English invalids to anything like the extent to which they ought to be, or, if they are, foreign steamers will reap the benefit. Of the suitability of the climate for many invalids there cannot be any doubt, and the reputation of the country as a health resort in winter is not likely to become less.

I am, Sirs, yours faithfully,

F.R.C.P.

"THE CONFERENCE AT NEWCASTLE AND THE MIDWIFERY QUESTION."

To the Editors of THE LANCET.

SIRS,—The largely attended and doubtless very representative meeting of medical practitioners in the North of England, which assembled at Newcastle to meet the Direct Representatives on the General Medical Council, took—as was foreseen from the attitude of the meeting at Hull—a very definite line on the midwifery question and a line which unfortunately appears to lie open to very grave objections. There cannot be the least doubt that the profession is in a state of much uncertainty and indecision on this question, and the reason in great part seems to me that many ardent reformers within its ranks do not see this question and the attendant facts in a true light. It is no longer a question whether the present state of things is or is not to be remedied. The question is what remedy shall be applied, and how shall it be applied, to a recognised evil. To say, therefore, that any practitioner or any coterie, or any meeting, objects to any and every Bill is simply to adopt the position of the cow which declined to recognise the express. Midwifery has been nursed by women commonly quite ignorant and certainly quite untrained from time immemorial to the middle of the present century, and it is an established custom. Good, bad, or indifferent there is the custom. Of recent years it has been recognised that this custom is attended by certain drawbacks, and this recognition has resulted in the present movement for some sort of remedy for these drawbacks.

First, there is the trained midwifery nurse. Unquestionably of these trained women large numbers have arrogated to themselves the assumption of medical knowledge which they do not possess, on the strength of the technical teaching which they have received. Midwives of this kind encroach upon the rights of qualified practitioners who are fully entitled to resist such encroachment, because the rights encroached upon are the reward of their individual efforts and achievements, and further are the complement to the disabilities and the restrictions which those practitioners have accepted in order to acquire the rights so encroached upon. That practitioners do resent this encroachment is perfectly natural, quite legitimate, and in no way unworthy, although some disputants have grossly exaggerated this aspect of the matter, for by merely referring to advertisements of practices for transfer it may be seen that a very limited amount of this kind of work is held to be an attractive and desirable feature.

Second, there is the untrained woman, a totally different kind of difficulty. This sort is at times grossly ignorant, absurdly superstitious, and disgustingly dirty. These defects are almost always present, or some of them, in some degree, and although her shortcomings are so to speak casual, nevertheless, she is in the aggregate the cause of an immense amount of unnecessary and avoidable suffering and waste of maternal and infant life. The total damage that she does to the community is out of all proportion more grave than the damage which the trained sort does to the faculty, and it is from her ranks mainly that the next sort is recruited.

Third, there is the mistrained midwife possessed of some knowledge which she perverts to illegal uses—a most dangerous and pernicious criminal. It may be undesirable to enlarge upon her enormities, but only the very simple are ignorant of her existence. There is no particular limit to her nefarious practices. She is an astute abortionist and unscrupulous. She keeps dubious homes and refuges and she is usually in league with the baby-farmer, while doing her best to limit the latter's trade. Judges know her, coroners know her, the police know her. Sometimes she has been to some extent trained, but more often not, and the damage, actual and moral, for which she is responsible is perhaps greater than that of both the other kinds put together, although her actual numbers may not be more than a minute percentage of the total of midwifery nurses.

This, then, being the state of the midwife in general, what is the state of the midwifery question in naked truth? All are agreed, Parliament and profession, that there is somewhat requiring remedy. That is where we are now. A remedy is to be devised. More, a remedy is going to be devised and enforced. Those who object to all and every remedy misconceive the position. It is no longer a question of what does the profession want or not want, it is which way is the inevitable remedy to be devised and applied? The Houses of Parliament know that well enough. The General Medical Council knows it well enough. Mr. Victor Horsley, as plainly appears by his speech on the subject at Newcastle, knows it well enough. The strange thing is that a considerable section of the profession does not seem to know it, and this meeting at Newcastle, with the all but unanimous resolution, plainly did not realise it and refused to believe it. That, of course, cannot alter the fact, but may have a very unfortunate effect upon the position of the profession therein, especially as those present at that meeting are by no means alone in the attitude they are adopting.

To return, however, to the actual position. There is urgent need of a remedy of some kind. Leaders of men are agreed about it, the Duke of Devonshire is not a statesman to be imposed upon by a mere babbling agitation, and these leaders are going to provide a remedy. What remedy, then, will they provide? Manifestly there is every probability that they will provide the ordinary remedy, the easily-enforced remedy, just as was done in the plumbers' case.

The midwives will be registered, there cannot be a doubt about it, except among those who cannot or will not see what is before them. It is therefore extremely necessary that the profession should devote its energies undivided to the securing of the best possible measure. Registration may not be an ideal remedy, it may not be the best practicable, it may be liable to abuse, it may be difficult to apply to penal purposes. But it has some advantages. As it is bound to come, common prudence dictates that its drawbacks should be minimised and its advantages reinforced to the utmost possible. Its various advantages are sometimes overlooked. It determines who is and who is not a midwife, and that is no small point when a woman prosecuted for obstetric irregularities is to be defended by a skilful advocate. Of itself the fact that they are earmarked will have a very considerable effect in limiting the vagaries and stiffening the consciences and curbing the malfeasances of those disposed to transgress. It will emphasise the difference between a midwifery nurse and a practitioner of medicine, although it is freely predicted to produce the reverse effect. That it can limit the assurance of the pretentious is unlikely, but it is doubtful if anything could do that. That it will cut off the most incompetent is unquestionable, and that it will ultimately be the undoing of the iniquitous is a certainty, since they will fear its publicity and hesitate to accept its protection. On the other hand, it is not easy to see how it can make matters worse than they are already. The plaint that it will create an inferior order of practitioners is untenable and might equally be applied to the Dentists' Register, but dentists do not as a matter of fact claim to be general practitioners. There is now a large proportion of the public which takes the services of the midwife rather than consult a practitioner, and registration cannot greatly alter that proportion, whereas it can be made a means of defining what a nurse may and may not do, which is now absolutely vague and indeterminate.

Parliament will not abolish midwives for the simple reason that it will never abolish anything, whether an acknowledged abuse or not. Parliament will not enforce professional attendance because it will never enforce any considerations of health, as in the contagious diseases and notification instances, unless it cannot possibly avoid doing so, and has only just abandoned the infinitely smaller compulsion of vaccination. Any such expectation is merely visionary, foredoomed to disappointment, eminently unpractical. There is but one course to follow—namely, to secure the best possible Bill and to introduce into it all the safeguards that can be used and enforced, profiting the while by the sad experience of the futility of the Act under which the medical profession is at present registered. That these ends can be attained or attempted better by others than by those who devised and matured the Bill of the British Medical Association is in the highest degree unlikely, but now is the time for those who consider that Bill capable of further improvement to produce and support their opinions.

To protest against the inevitable registration is useless. To demand the impossible abolition is unwise. To endeavour so to influence matters that out of the present seething mass of differences and disputations shall crystallise a useful, practicable Act is the only sound policy open to those who desire to protect the interests at once of the public and of the profession.

I am, Sirs, yours faithfully,

A PHYSICIAN.

PUBLIC HEALTH OF DUBLIN:

A MEASLES AND TYPHOID EPIDEMIC: CENTRAL FEVER DENS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

IN most large towns there are special black spots which when visited supply material for sensational descriptions of dirt, squalor, and insanitary conditions of the worst order. But these places are exceptional. They may give a death-rate of 40 per 1000 and yet the general death-rate of the town may not amount to 20 per 1000 per annum. Not a few of such places exist in London and it is not fair to judge a town generally by these particularly bad local examples of insanitary conditions. Therefore I have taken in Dublin a fairly broad street, situated in the centre, within a hundred yards or so of Trinity College and the Bank of Ireland, in fact in the very heart of the city. This is Townsend-street, and on entering this street between the Theatre Royal and the Lock Hospital there stands a large Protestant mission house and church. I was attracted here because I had heard that, on applying a test, it was found that the drainage of the Protestant mission house percolated into the cellar of a public-house—a fact scarcely calculated to promote the popularity of the mission. This had continued for some years, but when the nuisance was discovered the whole of the premises were re-drained, iron soilpipes ventilating on the roof and running outside the walls were introduced, with proper traps, flush, &c. Indeed, and whatever else may be said, for, or against,

the Protestant missions in Ireland, they are, so far as I have been able to see, setting a good example in respect to sanitation. Immediately opposite this mission, the street consists of three-storeyed brick houses, and barring the fact that they are let out in tenements there is nothing especially remarkable about them if only viewed casually when passing down the street. Some of them are, I am told, the property of Trinity College, at least the College is the original landlord, but it would be impossible to say how many intermediary landlords there are, and I was further informed that it is doubtful whether the rents are paid in anything like a regular manner. But the tenants to whom the rooms are sublet are made to pay very regularly; indeed, it is the general rule that the poorer the debtor the more strictly is he forced to pay.

The first house which I entered had a narrow passage leading to a small backyard, where there stood two closets. These being locked, and the tenants supplied with keys, proved to be clean. No key was provided for the closet of the house next door, and the result was most marked and unpleasant. The yard, which was loosely paved with round stones, was soiled in various directions with fæcal matter. The closet seat and floor were similarly befouled. Four families lived in this house, and they are supposed to use this one closet which is in the yard, though it was in such a filthy condition as to be scarcely approachable. There was a waste-preventer flushing apparatus, but the flush was badly delivered and insufficient, so that the pan was caked with filth of the worst description. It is only necessary to look up at the back windows of this house to judge of the poverty and dirt existing inside. Those panes that remained had almost entirely lost their transparency through the dust of ages that adhered to them. One window had no panes remaining at all, the lower part being boarded up and the upper part open freely to the wind and rain. One of the inhabitants complained bitterly of the cold, though doubtless some of these broken panes are useful in facilitating ventilation. The inhabitants said that sanitary officers frequently visited the house and swept up the yard. It is not so much that the dwellers of this and many other similar houses are so very dirty in their habits. The worst nuisance is caused by perfect strangers who simply walk in at all times of the day and night but more especially at night time. Some of these unwelcome intruders do not even take the trouble to go to the closet in the backyard but relieve themselves in the passage of the house. As it is a tenement house the street door is always open. The last to come home at night is supposed to shut it; but how is he to know that all the other inhabitants are indoors? In the third house I inspected, and while I was in the backyard, a man came in from the street. On being questioned he proved to be a perfect stranger. Without asking permission of anyone he had come to make use of the closet. There was a great quantity of fæcal matter in the passage of this house and the wall was saturated with urine which went through into a shop on the other side of this thin partition.

Crossing the street, but still remaining in the neighbourhood of these tenement houses, I came upon a gateway which was large enough to admit of the passage of a cart. It was very unevenly paved with round stones, so that the carts experienced a severe jolting as they went in and out; consequently some of their contents were shaken out. This proved to be manure, blood, and offal, as this entrance led to three private slaughter-houses. But, apart from this, there were also urine and human as well as animal fæcal matter, for it seems to be quite a common thing for a section of the population of Dublin to relieve themselves in the open air wherever they find a passage or dark recess. The passage or court led to a long yard which at the end turned at right angles. At this extremity, and facing the entrance from the street, were what must have been originally intended for coach-houses, but three of these are now converted into slaughter-houses and are, of course, absolutely unsuited for such a purpose. Yet all three slaughterers had obtained licences from the city. Facing two of these slaughter-houses the ground was paved with flagstones which had recently been cemented together. This, however, was of little or no use, for the drain inlet was several feet beyond, opposite the third slaughter-house, and here there was no cement, but only an irregular round stone pavement, which could not prevent the blood and filth from percolating into the subsoil. All the washing and sweeping from the two slaughter-houses passed over this before it could reach the gully of the sewer. The blood coagulated between the stones. A neighbour pointed out some poultry in the yard. Many of them were lame and had swollen legs. He thought that they injured their limbs on these rough stones and that the filth lying about poisoned the scratches or wounds. The walls around bore traces of damp reaching to some considerable height, and this damp was not water alone, but blood, manure, and all other kinds of liquid slaughter-house filth. Yet overlooking this yard are the St. Andrew's National Schools where hundreds of children breathe the effluvia wafted to them from this hidious quagmire of blood and offal. Doubtless this place is sluiced out frequently. There was no large accumulation of manure or offal at the time of my visit, but whatever care may be taken such a yard is absolutely unsuited for the purpose. Nor will surface sweeping and washing alter the terrible state of pollution of the subsoil. The most elementary of all rules is that the flooring of a slaughter-house should be absolutely water-tight and that every particle of moisture should go straight into the drain and not have any opportunity of sinking into the earth.

Dublin, Dec. 18th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Bombay City again threatened with Plague.—Difficulties of Plague Administration in Native States.—The Want of Preparations in Calcutta in the Event of a Severe Outbreak.—The Progress of the Epidemic: General Improvement.

THE health of Bombay city continues very unsatisfactory and there are indications that the city will suffer from another recrudescence of the plague. The general mortality is high, being at the rate of 53·40 per 1000 per annum, while the quinquennial average is only 35·43. Not only this, but the deaths from plague show a decided tendency to increase, and it is very probable that the disease is more prevalent than the published figures would indicate. I have drawn attention to this point for some weeks past, and as the usual interval between outbreaks in large cities has expired in Bombay the probability is that another development has already commenced. In view of the disastrous character of the recent outbreak in Poona the prospect in Bombay gives rise to great misgiving. The amount of inoculation which by a variety of devices has been done is small compared with the immense population (over 820,000), and all other plague measures have proved useless for protecting the city.

There seems to have been a much larger amount of plague in the Nizam's dominions than has been officially reported. Unfortunately, considerable friction with regard to plague administration has also occurred between the Plague Commissioner and one of the district talukdars. A village, named Gangawati, afflicted with plague was desired to be evacuated, but the orthodox Mohammedan in charge of the district was of opinion that there was no plague and refused to issue the necessary order for its evacuation. The Prime Minister hearing of this sent an English revenue officer to the district and the orthodox talukdar was ordered to have nothing to do with plague measures. The matter, however, was carried still further by appeal to the Resident and to the Government of India, but in the meantime the village in question had been evacuated. It is now reported that the Plague Commissioner (Lieutenant-Colonel Lawrie, I.M.S.) has refused to undertake any longer the duties while the talukdar of Lingsugsar, against whom serious charges of persistently obstructing the plague operations in the Nizam's dominions have been alleged, is allowed to continue in charge of that district by the native Government.

The Plague Commissioner in his official letter says: "At present plague work in Hyderabad is a sham and I cannot consent to be party to it." This difficulty is one, of course, which could only have occurred in a native State, but it shows that the official returns with regard to plague do not indicate the immense number of concealed cases of plague which must be continually taking place. For some time past the returns from Hyderabad have been very irregular, but the numbers reported as occurring in this State have been sufficient to cause considerable fluctuation in the weekly returns for the whole of India.

Like Bombay, the general mortality in Calcutta shows an ominous rise. Not that there is at present any definite indication of the increase of plague, but the weekly figures reported are very significant. An attempt to discredit the existence of plague in the city by certain leading natives supported by the native press has not been successful, and inquiry has only too surely proved its continued prevalence. The plague staff is composed of men who have seen a great deal of plague in Western India, so that the suggestion to institute an independent inquiry seems to be superfluous. Plague administration in this city is of the mildest possible character, and it may be said that there is no preparation in the event of a severe outbreak.

The total reported plague deaths for all India during the week ending Nov. 25th fell from 2968 to 2080, partly because no reports were received from Hyderabad. In Bombay City the reported plague deaths rose from 100 to 136, while the total mortality as above referred to still continued very high. The Southern Mahratta States showed a great improvement. This is distinctly satisfactory because the recent outbreak there had been abortive in character. Last year the disease was particularly virulent, but the epidemic was met by the employment of inoculation on a large scale, and it is probable that the effect of this wholesale inoculation has been successful. There were a few more plague deaths in Calcutta and a few solitary cases occurred in the Saran district.

Nov. 29th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Victoria University.

THE following gentlemen have been appointed external examiners of the Victoria University:—Anatomy: Arthur Thomson, M.A. Oxon., M.B. Edin., Professor of Human Anatomy in the University of Oxford. Pathology: Mr. S. G. Shattock, F.R.C.S., lecturer in St. Thomas's Hospital.

Bequests to Liverpool Charities.

The late Mr. William Ford of Liverpool has bequeathed the following amounts to the undernoted Liverpool charities: to the Royal Infirmary, the Royal Southern Hospital, and the Northern and Stanley Hospitals each £500; to the Infirmary for Children, the Eye and Ear Infirmary, the Liverpool dispensaries, and the Liverpool Hospital for Consumption, £250 each.

The City Council and the Sale of Tuberculous Milk.

The City Council have authorised the promotion of a Bill containing clauses severely penalising the sale of tuberculous milk and giving large powers for the inspection of dairies, both inside and outside the city.

Demolition of Insanitary Property.

At the quarter sessions held on Dec. 19th, a presentment was applied for by the City Council for the demolition of a large quantity of insanitary property in some of the lowest parts of the city. The Health Committee have been very active during the last few years in demolishing unhealthy tenements. Provision for housing the ejected occupants has on the other hand been rather tardy.

Dec. 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

AT the weekly meeting of the managers of the Edinburgh Royal Infirmary held on Dec. 18th the chairman welcomed Colonel Warburton on his first appearance at that board and assured him that he would always have the hearty coöperation of the managers in the discharge of his duties.

The Morison Lectures.

The first of the series of Morison Lectures was delivered on Dec. 18th in the hall of the Royal College of Physicians, Edinburgh, by Dr. Byrom Bramwell whose subject was Aphasia. The lecture was mainly introductory.

The Royal Society of Edinburgh.

At the second ordinary meeting of the Royal Society of Edinburgh held on Dec. 18th a paper was read by Dr. J. Souttar McKendrick, Glasgow, on the Zymolysis of Tissues, Physiological and Pathological. He referred to the literature on the subject of enzymes, their action and mode of extraction, and went on to explain his method of procedure in conducting researches on this subject. He made glycerine extracts of between 60 and 70 tissues and then demonstrated by clinical means the presence or absence of unorganised ferments or enzymes in these tissues. In all physiological and pathological tissues he found pepsin or a substance analogous to it. Trypsin was absent except in the pancreas. A milk-curdling ferment was only found in the situations where it is well known to exist. No inversive ferment was found. He found that the tissues of malignant tumours had certain proteolytic and slight diastasic properties. The tissues in eclampsia had marked diastasic properties. Communications were also made on the convection of heat by air currents, a new form of myograph, Swan's prism photometer, the claim recently made for Gauss to the invention of quarternions, and on Professor Klein's view of the nature of a quaternion.

Royal College of Surgeons of Edinburgh.

Dr. Arthur Logan Turner has been awarded the prize of 100 guineas offered by the Royal College of Surgeons of Edinburgh for an original unpublished essay on a subject in any branch of surgery, or in anatomy, physiology, therapeutics, or pathology, bearing on surgery, and open to all Fellows or Licentiates of the College other than members of the President's Council. The Bathgate Medal for materia medica was won after examination by Mr. David Mitchell, Broxburn.

Edinburgh Botanical Society.

At a meeting of the Edinburgh Botanical Society on Dec. 14th, Mr. Rutherford Hill showed specimens of betulin or birch camphor from the outer bark of betula alba and referred to its application, among other things, as a surgical dressing. A film of pyrobetulin on lint was found to be fatal to all forms of pathogenic organisms. A highly putrescible fluid had been effectually preserved by adding 50 minims of a 2 per cent. solution of pyrobetulin to four fluid ounces. Eggs coated with a film of pyrobetulin remained fresh.

Edinburgh Health Lectures.

The last lecture of the winter series in connexion with the Edinburgh Health Society was delivered on Dec. 16th by Dr. Theodore Shennan, who took for his subject Koch and his Work.

Epidemic of Typhoid Fever in Ayr.

At a meeting of Ayr Town Council on Dec. 11th Dr. W. J. Naismith, convener of the Public Health Committee, reported that since Dec. 1st there had been an outbreak of typhoid fever in the burgh. At present the cases, number 97. The authorities were able to give hospital accommodation to 20 of these cases, but steps were being taken to transform a mission church into a temporary hospital. The source of infection appears to be the milk from one particular dairy the supply from which has therefore been stopped. Up to Dec. 18th 138 cases of typhoid fever had been reported in Ayr, but it is believed that the crisis of the epidemic is now past.

Dec. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Health of Dublin.

THE death-rate of Dublin, although less high than that last reported, is still most unsatisfactory. The meeting of the Public Health Committee of the corporation took place to-day, Dec. 19th, when the superintendent medical officer of health reported that the death-rate from all causes in the city for the week ending on Dec. 16th was 41·9 per 1000 persons living, the mean for the corresponding period of the last 10 years being 29·7. The zymotic death-rate was 5·1, as compared with a mean rate of 2·3.

The Recent Outbreak of Typhoid Fever near Dublin.

It will be remembered that the Local Government Board inspector held an inquiry some weeks ago in the board-room of the North Dublin Union Workhouse into the circumstances attending the epidemic of typhoid fever at Castleknock and in the surrounding districts of Dublin. It then appeared

that the infirmary medical officer had neglected to notify a case of typhoid fever which occurred in the district, for which he was also the medical officer of health, and which appeared in the person of a man who was the proprietor of a dairy. It further transpired that the dairy, though existent for some 14 years, had never been reported or inspected by the officials of the Public Health Department. The outbreak of typhoid fever, which included some 60 cases, was fairly proven to have been caused by infection from this dairy. After a month's delay the Local Government Board has recently taken strong action. At a meeting of the Castleknock Board of Guardians, held on Dec. 13th, a letter from the Local Government Board was read directing the guardians to require the resignation of the dispensary medical officer of the district and also the resignation of the two sanitary officials who had neglected their duties. The board of guardians passed a resolution requesting the Local Government Board to reconsider their decision in reference to the medical officer on the grounds that he had proved up to the present a most efficient officer and that this was his first offence. The final decision of the Local Government Board has not yet been made.

Dec. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Incentives to Research.

I SEND your readers some further particulars of the munificent gift of M. Daniel Osiris which was noted in THE LANCET of Dec. 9th.[1] M. Osiris has handed over to the Institute of France a capital sum representing some 32,000 francs of income for the purpose of founding a prize which will be given every three years and which will amount to about 100,000 francs. This sum is to be allotted to him who shall have done the most remarkable work during the three years in science, letters, arts, industry, or generally in whatever subject shall be deemed to have best served the public weal. Among the subjects which M. Osiris will be most pleased to see win the prize are researches and results in surgery or medicine such as will bring cure or relief of such evils as for which at present there seems to be no efficacious remedy or results which tend towards the prevention of such evils. The Institute of France will decide every three years in general assembly as to the awarding of the prize. M. Osiris suggests that the institute should consider the claims not only of those candidates who offer their work for competition, but that they should search out matters for themselves since real, true merit often shrinks from publicity. The prize is only open to persons of French nationality, except during the holding of a Universal Exhibition when foreigners may compete. If the work sent in is the result of a collaboration each collaborator shall share in the prize proportionally to the part he has played.

The Existence of Arsenic in the Normal Organism.

At the meeting of the Academy of Medicine held on Dec. 5th M. Gautier communicated a paper upon the Existence of Arsenic in the Normal Organism. He showed that arsenic was met with in the normal body. In the thyroid gland it was found in very small quantities, it was true, but still capable of being weighed, and it also existed in still smaller quantities in the brain and in the thymus, but no trace could be found in any other viscus. It existed as an arseno-nuclein—i.e., a combination of arsenic and nuclein—which, together with the common phosphorised nucleins, play an important and even necessary part in the economy of the cell-nucleus (*noyau*). Therefore in various maladies of the viscera where arsenic existed normally and disappeared pathologically the medicinal administration of arsenic was indicated and gave good results. The various organs would seem to possess certain latent specific functions with which were bound up certain chemical characteristics marked by the presence of certain chemical bodies and particular kind of cells. For example, manganese was found in connexion with certain oxidising ferments, iodine in the thyroid body, fluorine in the bones, and arsenic in the brain, the skin, and the thyroid. This theory, which was founded upon accurate chemical analysis, allowed the physician to formulate definite lines of medical treatment with a view to supplying to the various organs the indispensable chemical substance which might be lacking in any particular case. Finally, the idea was of great importance from a medico-legal point of view. For instance, in estimating the amount of arsenic to be found in the body the various organs should be taken one by one, for arsenic existed normally in the brain, the skin, and the thyroid body. This last remark of M. Gautier brought up M. Brouardel, who remarked that he had always insisted upon the necessity for keeping the organs separate at a post-mortem examination. While he gave every credit to the important work of M. Gautier, yet he must say that the previous results obtained by medico-legal experts were not weakened, for in their case arsenic had been detected in marked quantities in the stomach and especially in the liver.

[1] THE LANCET, Dec. 9th, 1899, p. 1635.

Public Examinations for Hospital Appointments.

I send some further notes upon the recent *concours* for hospital appointments. The students maintain that sundry irregularities were committed at this examination on the very first day. The subject for competition is chosen by lot and given out in public at the opening of the examination, in a room filled with candidates and their friends. An official then gives out duly stamped sheets of paper upon which the candidates write their answers to the questions so that they cannot bring in their answers ready written. It would seem that this year the friends of certain candidates stole a packet of the officially stamped paper and when the public had to withdraw took this paper out and wrote the answers to the questions with the aid of books. Then, when the public were admitted at the end of the examination the interested candidates substituted these answers for the ones they had themselves written. The story goes that the author of the outrage was a candidate who in a moment of abstraction sent up both his own answers and those supplied by his friends, so that to avoid the exposure which would surely follow his being called upon to read his paper he took this method of rendering the examination useless and so necessary to be held over again, by destroying the papers. The inquiry committee of the Assistance Publique has met to decide on what to do and after having heard a report from M. Voisin came to the conclusion that they would leave the decision in the hands of the Conseil d'État but gave it as their personal opinion that the examination should be held over again. They also decided that in future the public should not be admitted when the examination papers were given out, which goes some way to prove that the story among the students about the two copies is not so very far from the truth.

Dec. 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A University Complication.

GREAT commotions have lately occurred at the university in the class-room of Professor Behrendt, the well-known dermatologist, during a course of lectures delivered by him on prostitution from an ethical, social, and medical point of view. At these lectures there is a large attendance of students and of other persons as well, for in the university there is hardly any examination of admission tickets. A great sensation was, however, produced at the first lecture, when an elderly lady entered the room, the whole assembly raising and furiously shouting out "*Raus!*" ("Go out"). The tumult continued when the Professor appeared, and being informed of the cause of the disorder he stated that the lady had requested permission to attend his lectures. He asked the students to behave quietly, which they finally did, so that the lecture was finished without further interruption. But at the next lecture a similar tumult broke out again, although the University authorities had taken the precaution of excluding unauthorised persons by a strict examination of the tickets. Professor Behrendt again addressed the students, saying that the lady, being the superintendent of a public school, had not come from any motive of idle curiosity but that she had already done a good deal of work in the study of social science. The students, however, turned a deaf ear to the explanations of the Professor and on beginning his third lecture he found

himself compelled to announce that he had withdrawn his authorisation to the lady to attend his lectures owing to the fact that the subject seemed to be too delicate to be treated before a mixed audience. He declared his intention to speak on the same matter before an audience of ladies only, so that the sensibilities of the students might not be wounded. This announcement was received with general applause by the audience and the lectures proceeded without further incident. The press generally blames Professor Behrendt's attitude, maintaining that there was no reason why a lecture on prostitution might not be attended by ladies simultaneously with male students provided that the ladies had only proper scientific objects in view, as was evidently the case in the present instance. The newspapers also blame the students and point out that in other countries—as, for instance, in America—no distinction is made between male and female students and that the presence of ladies, far from being prejudicial to academical life, might, on the contrary, contribute very much to refine the manners of students. The association for female education has addressed to the senate of the University a protest against the separation of male and female students in the University. The Berlin branch of the International Federation of Women has also protested against the exclusion of women from lectures on social matters and has drawn the attention of the senate to the fact that the question of prostitution has been discussed at the two congresses of Zürich and Geneva before a mixed audience without any inconvenience, although the majority of the assembly did not consist of educated persons.

Treatment of Puerperal Eclampsia.

An article on the Treatment of Puerperal Eclampsia has been published in the *Münchener Medicinische Wochenschrift* by Dr. Everke of Bochum. He points out that as a rule the convulsions cease as soon as the child is born and therefore he is of opinion that eclampsia is produced by a toxic influence issuing from the fœtus and entering the circulation of the mother through the placenta. A rational treatment of eclampsia must therefore consist in rapid instrumental delivery. He has treated 38 patients in this way. In seven of those cases the labour had advanced so far that delivery could be effected by simple application of the forceps or by turning. Six of the mothers recovered; the remaining one was in a moribund state and died. Of the children four survived, one died immediately after its birth, and two were found to have died during the fits. In the other 31 cases the situation was much more complicated, the os being not yet sufficiently dilated to allow the introduction of instruments or of a finger. In 28 of these cases the os had therefore to be opened by incisions after Dührssen's method previously to the application of forceps. 20 of the mothers recovered and eight died, three of the latter having been in a moribund state. Two died from septicæmia and only three from eclamptic coma. In 22 women the eclamptic fits disappeared immediately after instrumental delivery. As to the children 23 were born alive (once twins), in five instances death occurred in the uterus, and one child died in delivery. The mortality of the children was therefore 5 per cent. and that of the mothers only 12 per cent. In three cases dilatation of the os by incisions proved impossible so that Cæsarean section was performed. Two of the mothers died 15 and 12 hours respectively after the operation. Both had been operated on in deep coma and would obviously have died even without an operation. The third woman recovered, the fits ceasing immediately after operation; her child unfortunately died, whilst those of both the other women survived. According to statistics by Dr. Hillmann Cæsarean section has up to the present been performed for eclampsia in 41 cases, the result being that 21 of the women died and 20 recovered. These results are not so unsatisfactory as they might appear, an operation like Cæsarean section being, of course, performed in very bad cases only.

Treatment of Gonorrhœal Epididymitis.

Dr. Bettmann of Heidelberg, writing to the *Münchener Medicinische Wochenschrift*, recommends the application of a solution of salicylate of methyl with olive-oil in gonorrhœal epididymitis. A piece of cotton-wool moistened with the above solution is put on the scrotum and covered with caoutchouc tissue. This bandage may be left for 12 hours before being changed. The swelling generally decreases and in particular the pain is relieved very soon.

The Medical Chambers.

The results of the elections to the medical chambers are now published. In Berlin the combined list of the Standesvereine and of the Free Choice Society came out at the head of the poll, whilst the two other lists, that of the Berliner Aerztevereins-Bund and of the Free Association of Medical Practitioners, had only a few hundred votes. In Berlin 72 per cent. of the medical men recorded their votes, whilst at the preceding election the number of votes was 76 per cent. of the total. The interest of the profession seems therefore to be diminishing although a comparatively animated agitation was kept up by the different combinations. Professor von Bergmann, the celebrated surgeon of Berlin University, is among the elected members. In the provinces, where the agitation is as a rule less active than in the metropolis, nearly all the old members were re-elected.

Dec. 18th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Microbes in Holy Water.

DR. ABBA, a distinguished bacteriologist of the Sub-Alpine School and one of the health officers of Turin, has for some time been examining the holy water contained in the *bénitiers* or fonts attached to the pillars or walls inside the entrance-doors of sacred edifices. Thirty-one specimens of such water from as many Turinese churches have been analysed by himself and his assistants in the municipal laboratory, and the results have more than confirmed his anticipation that the water in question may be an effective conduit of disease. It is exposed to the dust that finds free access to church interiors; it is dipped into by the fingers of the faithful on Sundays and weekdays morning, noon, and night—fingers mainly of the abject poor, guiltless of the nail-brush or even of common soap. The sacristans, moreover, Dr. Abba found, seldom or never troubled themselves with cleaning the font itself—rarely, indeed, doing more than applying a wet mop to the pillar or slab in which the font is fixed. Among other microbes Dr. Abba detected the bacillus of tuberculosis in one of the specimens, while a colleague of his found in another the characteristic bacillus of diphtheria. Granted that neither bacillus can find in church interiors a favourable "atmosphere" or element in which to multiply, their very presence in the holy water quite justifies the precautionary measures which Dr. Abba recommends. These include a weekly washing and disinfecting of the pillar or wall from which the font projects, a daily application of the same process to the font itself, and the treatment of the water with antiseptics. Such intervention on the part of the "mere hygienist" is, however, indignantly opposed by the Church press, the most authoritative organ of which, the *Osservatore Romano*, often but erroneously called the mouthpiece of the Vatican, protesting that the "water," being "holy," needs no human treatment. Such lay practice it further condemns as "antiritual" and "not free from grave objections." Nineteen centuries it adds, have come and gone and not till to-day has the water been even suspected as a channel of disease. But is such really the case? Salt from very ancient times has been mingled with the holy water, and even if the practice can lay no claim to scientific inspiration still it must have had some "preservative sanction," easily transferable in the light of modern hygiene to the employment of kindred salts deriving from chlorine an antiseptic virtue. The Church which has absorbed into its ritual the feast-days of pagan antiquity and given them Christian rehabilitation and observance need have no difficulty in so modifying the saline ingredient added to holy water in the first centuries as to make it a true and efficacious disinfectant, destructive of the microbes known to modern science and reinforcing the spiritual use of the water by another benignantly hygienic. The Holy Year which commences on Christmas Eve, attracting as it will to the Italian, and especially to the Roman, churches millions of the faithful, might fitly inaugurate the new departure in this direction and so acquire a historical distinction in no wise prejudicial to the interests of the Church.

The Tourist in Italy.

Italy is at present the scene of two counter movements destined ere long to come into collision. There is the movement "per favorire l'affluenza dei forestieri in Italia," and

there is the movement to boycott the English-speaking practitioner. Let me take the former first, that organised "to favour the sojourn of foreigners in Italy." About a year ago a distinguished member of the Italian Chamber of Deputies, Signor Ferraris Maggiorino, by pen and speech insisted that it was Italy's duty to lay herself out with all diligence for the attraction in increasing numbers of the stranger within her gates, and his appeal was responded to by his compatriots so cordially and so universally as to show how accurately he had interpreted one of their chief wants. A "Società di Albergatori" (Association of Hotel-keepers) was formed, with representatives in all the great centres of tourist-resort, and concurrently a "Comitato *Pro Litorali*" (Committee for the Riviera), with no less a man at its head than Signor Biancheri, Member of Parliament for San Remo and many times President (or, as we should say, "Speaker") of the Lower House. The programme of these bodies was in some respects salutary. The foreign visitor was to be relieved as much as possible of Custom house vexations at the frontier. Pressure was to be applied to the railway companies to secure a higher standard of comfort in travelling, with a nearer approach to punctuality in the departure and arrival of trains, with a severer surveillance of the luggage department (for the prevention of robberies), and with the expulsion of mendicants, touts, and such "instruments of torture" from the neighbourhood of art-galleries and places of interest. So far, well; but little was said as to one great want of the visitor—sanitary reform in the chief centres of resort and improved hygiene in hotel appointments; while nothing at all was said as to, perhaps, the said visitor's supreme desideratum—the power of calling in a compatriot practitioner in the event of illness. Was this last omission due to the fact that an influential part of the medical profession was still agitating, not, indeed, for what it ostensibly claims, "reciprocity" in the recognition of diplomas between Italy and the other European States, but for what it really aims at—the exclusion of the foreign, particularly the English-speaking, practitioner from a compatriot *clientèle?* Whether the omission referred to admits of such explanation or not it remains undoubted that the agitation in question has become more uncompromising than ever and that so long as there is the remotest chance of its eventual triumph the "Società di Albergatori" and the "Comitato *Pro Litorali*" may as well dissolve. Let these bodies rest assured that their "trump card" in the game of attracting "remunerative guests" is the presence of the English-speaking practitioner and that his exclusion will more than neutralise all the springes and snares with which, under the name of "facilities," "comforts," and so forth, they seek to draw the guests in contemplation into their net. At a meeting held on Friday, Dec. 15th, in Rome, the "Società di Albergatori" (Signor Biancheri in the chair) carried a resolution to convene early in 1900 a "grandioso Comizio" of their representatives to devise means for increasing the "affluenza dei forestieri." They secured the support of the Minister of Foreign Affairs (the Marchese Visconti Venosta), of the Minister of Marine (Admiral Bettòlo), of the Minister of Public Works (Signor La Cava), and of the Minister of Public Instruction (Dr. Baccelli)—all of whom promised their active coöperation towards the end in view. Let the "Albergatori," however, be persuaded of this, that in spite of Government sympathy and support their movement will issue in a "fiasco solenne" unless they can first assure the English-speaking public that the British-American practitioner shall be free to attend a compatriot *clientèle* on Italian soil. This I can say with confidence after a whole generation's experience of Italy and her relations to the outside world. *Sit verbum sapienti.*

Dec. 18th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Plague in America.

CONTRARY to all confident prognostications the bubonic plague has appeared in America. Several cases have occurred at Santos in Brazil, where it seems as if there might be an epidemic of the disease, as some deaths have been reported, and it is also rumoured that the malady has broken out in other towns in that country. A merchant vessel named the *John W. Taylor*, trading between Santos and New York with a cargo of coffee, had a slight outbreak of plague while on the voyage to the latter port. One of those attacked died at sea and two were suffering from the disease when the ship arrived at its destination. For some days no further cases developed, but subsequently the third engineer was stricken. The New York Health Board have ordered the ship into strict quarantine and will not permit her to dock or deliver cargo at New York. Dr. Murphy, President of the New York Health Board, said that this decision had been greatly influenced by the following letter received from Dr. Ashmead, the well-known authority on leprosy, "Disinfection will not destroy the bacillus in the centre of the refuse left by the rats. This has been proved in Bombay. The burning of the cargo is the only safe rule of sanitation for this and every other plague ship that may come here. All of the rats on this ship must be destroyed and even their dead bodies should be cremated." The patients have been removed to Swinburne island where they are doing well, and the quarantine officials believe that they have stamped out the infection. There are at present in quarantine in New York Harbour three other vessels laden with coffee besides the *John W. Taylor*, all hailing from Santos. The value of the coffee is estimated at more than £200,000, but what will be done with this freight no one appears to know, although it is believed at the quarantine station that the four vessels will proceed to Halifax or some other foreign port. The New York *Sun* says that the Treasury Department, through the Marine Hospital Service, will make provision at once for the supervision of the shipping of coffee from the plague-infected port of Santos. Dr. Doty, the health officer of the port, has made certain recommendations to Dr. W. Wyman, the Supervising Surgeon-General of the Marine Hospital Service, and it is Dr. Doty's belief that Dr. Wyman will send officers to Santos at once. Dr. Doty said that the general plan was to have United States officers watch the coffee from the time it was baled on the plantations until it was on board ship and out to sea, to have the cargoes loaded from lighters, and to have the ships thoroughly disinfected just before they sailed. There is said to be a certain amount of friction between the health officer of the port, the State quarantine officer, and the New York Health Board as to means to be employed to keep out the plague. The decision come to by the Health Board that the vessels from Santos should not be permitted to enter the port or to discharge their cargoes is somewhat at variance with the opinion of Dr. Doty and the State quarantine officials who esteemed it a sufficient precaution that the cargoes should be thoroughly disinfected by steaming. The Health Board take the view that so little is known concerning the origin or treatment of plague that it will be better to err on the side of rigour than to permit the slightest chance of ingress of plague into New York. Of course, with a disease of the nature of plague it is always well to be on the safe side, but as the case of the *John W. Taylor* is one of precedent the wisdom of the extreme action of the Health Board is questioned by many experts in New York.

Housing the Poor Problem in New York.

New York, like London, has this difficult problem to face and probably in the former city the solution will be found harder than in the latter. Owing to the situation of New York it is the most heavily rented and overcrowded city in the world. In the tenement district of the city the population is said to be more than twice as dense as in the most congested part of London. The inhabitants, too, of the aforesaid district are probably the most varied in race and religion and on the whole the most poverty-stricken of any civilised land. New York is at a disadvantage with London with regard to space on which to build, and being shut in by water the area which it is possible to utilise for workmen's dwellings is very restricted. Nevertheless, the philanthropists and social reformers of New York have come to the conclusion that steps must be taken to redeem the poor from the moral and physical degradation into which so many of them have fallen, and it is recognised that until means have been provided to permit them to live in cleanliness and decency measures for their moral amelioration will be futile. The building of the Mills model lodging-houses—similar in most respects to those erected in London by Lord Rowton and the County Council and a description of which was given in THE LANCET[1] some three years ago—was the first

[1] THE LANCET, March 28th, 1896, p. 867.

forward movement of the New York reformers. But these lodging-houses, excellent as they are and admirably as they have answered the purpose for which they were built, only benefit a small portion of the impecunious fraternity; in fact, as in London with the Rowton Houses, so in New York with the Mills Hotels—they are mainly patronised by a class somewhat above the very poor clerks—mechanics earning fair wages and a sprinkling of broken-down professional and business men. Again, lodgings of this description are only available for single men. The need in New York is the erection of workmen's dwellings of the type of the Peabody Buildings in London and of the structures erected by the London County Council to be seen in the Bethnal Green neighbourhood and in other poor sections of the metropolis. The report of the Tenement House Committee of the Charity Organisation Society of New York has just been published. This committee was formed in October, 1898, its object being to pass through the State Legislature a law amending the municipal building code, to secure further remedial tenement house legislation if necessary, and to make a careful study of the general tenement house problem. Two Bills, one of which was to the effect that the Municipal Assembly should no longer have the power to revise the building laws, and the other a Bill authorising the governor to appoint a commission to revise the building laws, including the tenement laws, were, although approved by the best sentiment of the community, thrown out owing to the peculiar political construction of the Senate during the past year. In June of this year the Tenement House Committee submitted to the Municipal Building Code Commission this report. "The proposed ordinances provided that in all new tenement houses no air shaft should be less than six feet wide in any part nor less than 150 square feet in superficial area; that no new tenement house should exceed six storeys in height unless it was fireproof; that all living rooms in tenement houses should contain at least 600 cubic feet of air space; that for every new tenement house containing 20 families or more there should be provided at least one bath or shower bath in a separate apartment for the use of tenants; that every tenement house hereafter erected or altered four storeys or more in height should have the first storey made fireproof; that the walls of all tenement houses hereafter erected should be carried up three feet six inches above the roof on all four sides so that the roof might be used as a playground. These ordinances also laid down that the light in these houses in the daytime should be sufficiently bright to read by, and that every possible precautionary measure should be taken to safeguard against fire. If the committee of the Charity Organisation Society of New York had been able to carry these ordinances into effect an almost ideal class of tenement house would have been provided. Unfortunately, however, the proposed improvements clashed with the interests of a large number of the New York municipality and a new building code was introduced which embodied none of the more important specifications with regard to tenement houses suggested by the committee. It is the intention of the Charity Organisation Society to continue their crusade against the insanitary houses inhabited by the poor of New York, and there can be little doubt that their perseverance will in the end be rewarded.

Dec. 11th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Australian Hospitals.

As mentioned last month the Medical Congress passed a strongly-worded resolution with reference to hospital administration in all the Australian colonies, stating that in the interests of the State radical changes were demanded in the constitution, management, and maintenance of public hospitals in Australia. This general statement has been amply confirmed so far as the hospitals of New South Wales are concerned, and in a most detailed manner, by the report of the Royal Commission on Public Charities just issued. It is a comprehensive and voluminous blue-book of 250 pages and is divided into 16 sections. It appears that in New South Wales there are 108 hospitals subsidised by the State, one maintained entirely by the State, and five not subsidised. There are in addition five institutions for lying-in cases, three of which receive Government aid. In all there is provision for about two and a half beds per 1000 of the population, with in addition 1383 hospital beds in the Government asylums for the infirm and destitute, making a total of 4805 beds, or about three and a half per 1000 of the population. During the last 10 years the number of hospital beds has increased 50 per cent. and the number of hospitals 36 per cent. The total expenditure in 1898 was £145,424 and the receipts were £142,686, of which amount the Government contributed £83,355, exclusive of the cost of treatment of the sick poor in the Government asylums for the infirm and destitute, or 51·3 per cent. of the total revenue of the subsidised hospitals. The cost per bed varied from £25 to £400 per annum. With regard to abuse the Commission states that the evidence given shows that "the charity of the hospitals is taken advantage of by a number of persons who have no claims upon it whatever."

Under present arrangements beds in the general metropolitan hospitals are occupied by three classes of cases that, in the opinion of the Commissioners, should not be admitted thereto: 1. By those who can afford to pay the private practitioner for attendance or who should avail themselves of the accommodation and care already to be obtained in private hospitals, or which would no doubt soon be obtained at a reasonable rate if the general hospitals shut their doors against this class. 2. By those who come under the notice of the police or of charitable organisations and individuals as needing medical assistance and who, owing to the want of a free dispensary with medical officers, are taken into the hospital when they would much rather, and might with greater economy and equal efficiency, be treated at their own homes. For this class a free dispensary is a necessity. 3. By those who are sent by Dr. Paton, the Government medical officer for Sydney, for treatment in the general hospitals because no suitable provision for them exists in the hospitals managed entirely by the Government. This class is undoubtedly a very large one and includes a very large proportion of the persons applying at the Hospital Admission Depôt for relief. The remedy in this case is the provision in connexion with the Government asylums for the infirm and destitute of properly built, properly equipped, and properly managed hospitals, having wards set apart for special cases and corresponding in general arrangements with the sick asylums, now so numerous in England, which have grown out of and have replaced the sick wards in poorhouses. These hospitals could, we are assured, be managed efficiently and with all due liberality at a cost per bed very considerably less than the present cost in the general hospitals.

In respect to the out-patients' department the Commission reports that—

The hospitals are competing with the outside practitioner and with provident dispensaries and other organisations, and that they are also fostering a spirit of pauperism and dispensing aid to a number of non-necessitous people. Hospital directors are not exempt from a tendency to magnify their office and to set forth the importance of, and the increase of, the work of the institution which they are called on to govern; and if they do not take steps to enlarge the sphere of its operations they are inclined to view with complaisance the increase of the out-patients' department, whilst the system under which Hospital Saturday and Sunday funds and other collections are distributed to those institutions which show the greatest aggregate number of in- and out-patients tends to foster the evil. The remedies for the evils of the present system are perhaps difficult to find, but a more systematic inquiry into the circumstances of both out- and in-patients is certainly necessary, and this inquiry can only be carried out by following up the inquiries made at the hospitals by visits paid by an intelligent inquiry officer at the addresses given by the patients.

The abuses in the out-patient department might be further checked—

1. By insisting on a note of recommendation from the local medical practitioner in all cases coming from a distance or from outside any such area as could be worked by an inquiry officer. 2. By giving priority to all cases bringing recommendations from medical practitioners in the general out-patients' department and by insisting on such a recommendation in all cases to be treated in the special departments of the hospital. 3. By refusing to attend to any but the more serious accidents and casualties except in the case of patients obviously unable to pay and referring the patients to their own medical attendant, by which the idea at present entertained that everyone who meets with an accident, however trivial, has some right to hospital treatment might be corrected.

In conclusion the Commission makes 14 recommendations, the more important of which are:—

1. That all subsidised hospitals shall be periodically visited by an officer of the Government who shall have power (1) to audit the accounts at any time; (2) to ascertain if the funds are expended for proper purposes, with due regard to economy; (3) to see that the by-laws are carried out in their integrity; and (4) to report generally on the management of the institution, with a view to bringing under the notice of the Government and the committee any defects that may, in his opinion, exist in connexion therewith.

2. That a thorough inquiry by a Government officer and a favourable report as to the necessity for the establishment of any new hospital should be conditions precedent to the granting of Government assistance either to build or maintain that hospital.

3. That model plans for country and district hospitals be prepared by the Government as guides to local committees in the construction of new hospitals.

4. That the Government subsidy of £ for £ be continued both in regard to funds collected for the building and equipment, and also for the maintenance, of hospitals; but that special grants in cases where

no like amount is raised by subscription or otherwise should not in future be given.

5. That as hospitals can, except under very special circumstances, be suitably built and adequately equipped at a cost of £200 per bed, the Government subsidy towards the building fund should not exceed the amount of £100 per bed.

6. That the Government subsidy should only be granted where it is shown on the report of the inspecting officer that all regulations made by the Government are acted on, and that an efficient system of inquiry as to the pecuniary positions of both in- and out-patients is carried out.

8. That in the absence of any local Poor-law administration the Government should provide and maintain, in connexion with the asylums for the infirm and destitute, one or more hospitals on the model of the sick asylums under the Poor-law board in Great Britain and that when these are available the patients sent by the Government to the Sydney and Prince Alfred Hospitals should be only such cases as require special operative measures, or cases of emergency which would be prejudiced by delay in treatment.

9. That the administration of the Coast Hospital be removed from the control of the medical adviser to that of the Director of Government Asylums for the Infirm and Destitute, and that the institution be worked in connexion with the asylums for the infirm and destitute and the hospitals or sick asylums above recommended, and that it be utilised (*a*) for cases of infectious disease until other provision for these cases is made; (*b*) for cases in men; and (*c*) for ordinary hospital cases which will not be prejudiced by the journey.

11. That a lock hospital for women, with not less than 30 beds, be established in Sydney and conducted under the Department of Government Asylums for the Infirm and Destitute.

Influenza.

A severe epidemic of influenza is raging all over Australia, but especially in the country districts of Victoria. Daily the telegraphic reports from the inland towns chronicle the deaths of well-known individuals from this disease, chiefly from an accompanying pneumonia. The demand for nurses is greater than the supply and the ordinary general practitioner is kept busy night and day. A large number of the profession is laid up with the prevailing epidemic, among them Sir T. N. FitzGerald, who has had a very severe attack. The sailors on the warships in Sydney Harbour and the silver miners at Broken Hill are alike prostrated with influenza.

Small-pox and Federal Quarantine.

The steamer *Afric* arrived recently at Albany, West Australia, from Liverpool and the Cape of Good Hope with six cases of developed, and two of suspected, small-pox on board, and 250 passengers for different eastern ports. As there is no system of federal quarantine each colony simply looks after its own interests and quarantines the passengers landing at its own ports. In this case the Board of Public Health of Victoria sent a medical officer to Adelaide and vaccinated there all the patients to be landed at Melbourne, who were then quarantined on arrival there. Fortunately, no further cases of small-pox occurred. The steamer went on to Sydney and was quarantined there. What is urgently wanted is the establishment of a thorough system of medical inspection and quarantine at the first port of call for the main lines of ocean traffic, and the system should be federal and one in which all the colonies should coöperate.

The Coast Hospital, Sydney.

Dr. Ashburton Thompson, chief medical officer of the Government of New South Wales, has presented his report on the Coast Hospital for the year 1898. The total number of patients under treatment was 2694, with a mortality of 5·8 per cent. The number of infectious cases under isolation was 766, an increase on previous years due to epidemics of scarlet fever and measles. Dr. Thompson says:—

> I would point out that the distance at which the hospital stands from the inhabited area, which has ever been a ground of complaint with the poor, who find it difficult to visit their relatives while they are under treatment, must militate especially against its efficiency as a means of limiting the spread of infectious diseases which attack young children chiefly. From this point of view it may perhaps be questioned whether the preventive results attained are commensurate with the cost incurred. The buildings used for isolation purposes are unsuited to them in construction and arrangement, and cases have arisen which gave ground for inquiring whether the infection had or had not been received from other patients already in isolation.

St. John Ambulance Association.

The ninth annual business meeting of the St. John Ambulance Association, New South Wales Centre, was held recently, Mr. Vandeleur Kelly presiding. The report gave a satisfactory account of the year's work, several important branches having been established and large classes instructed. Regret was expressed that the authorities on the numerous mines in the colony did not train the men in "First Aid" and that the cyclists' clubs did not do the same.

Death of Dr. Collingwood.

The news cabled from England of the death of David Collingwood, M.D., B.S. Lond., F.R.C.S. Eng., late of Summer Hill, Sydney, was received with feelings of deepest regret. Dr. Collingwood was for many years honorary physician to the Prince Alfred Hospital, Sydney, and held other appointments. When in London he was Demonstrator of Anatomy and Practical Surgery at University College. During his residence in New South Wales he not only built up a very large and lucrative practice, but endeared himself to his patients and his professional brethren. He was one of those men whose charm and personality held those who came within his influence as with a spell. He was also an indefatigable worker, full of enthusiasm for his profession, and also a man of wide culture and high attainments beyond as well as within the profession. When he left Australia he seemed in perfect health, but while in England he caught cold and developed pulmonary tubercle. He went to Algeria without benefit, then to Hohenhonnef in Germany, and his brilliant career was finally untimely cut short by a severe hæmorrhage.

Nov. 5th.

Medical News.

UNIVERSITY OF LONDON.—The following candidates at the M.D. examination were successful:—

Medicine.—Cyril Wolrige Alford,* Middlesex Hospital; Frances Armitage, B.S., London School of Medicine for Women; Richard Hamilton Ashwin, Guy's Hospital; Cecil Banting, B.S., and Charles Henry Benham, University College; Eustace Bernard Bostock, B.S., Mason University College and General Hospital, Birmingham; Stanley Longhurst Box, St. Bartholomew's Hospital; Harold Wilson Bruce, B.S., Guy's Hospital; Charles William Buckley and Alfred Burn, St. Mary's Hospital; Arthur John Cleveland, Guy's Hospital; Sydney Cornish, B.S., St. Bartholomew's Hospital; John Morton Sim Coutts, University College; Thomas Varley Cunliffe, B.S., Owens College and Manchester Royal Infirmary; John Currie, St. Bartholomew's Hospital; Frederick John Fielder, B.S., King's College; Ernest George Leopold Goffe, B.S., University College; Frank Redmayne Greenwood, Mason University College; Archibald Gordon Gullan, University College, Liverpool; Charles Poulett Harris, London Hospital; Joseph Coote Hibbert, University College; Cortis Rawsthorne Hodgson, B.S., Guy's Hospital; Thomas Jeeves Horder, B.Sc., St. Bartholomew's Hospital; William Ernest L. Horner, B.S., University College; Ernest Henry Houfton, Yorkshire College; Sydney Penrose Huggins, St. Bartholomew's Hospital; John David Jenkins, B.S., London Hospital; John Temple Leon, B.Sc., St. Mary's Hospital; James Laidlaw Maxwell, B.S., St. Bartholomew's Hospital; Robert William Mayston, Guy's Hospital; David Nunes Nabarro, B.Sc. (gold medal), University College; Richard Henry Norman, B.S., Westminster Hospital; Sidney Herbert Perry, Mason University College; John Williamson Pugh, London and St. Bartholomew's Hospitals; Frederick William Robertson, B.S., and George Nathan Oscroft Slater, St. Bartholomew's Hospital; Hubert John Starling, Guy's Hospital; Florence Ada Stoney, B.S., Royal Free Hospital; and Percy Glyn S. Williams, B.S., University College.

State Medicine.—Robert Cullum Gully, M.D., St. Bartholomew's Hospital; Herbert William Jackson, University College; and Arthur Nesham Weir, B.Sc., St. Bartholomew's Hospital.

* Obtained the number of marks qualifying for the gold medal.

The following candidates at the B.S. examination were successful:—

First Division.—Thomas Rupert H. Bucknall, M.D., University College; Adeline Mary Roberts, London School of Medicine and Royal Free Hospital; Mabel Geraldine Stevenson, Royal Free Hospital; Wilfred B. L. Trotter, M.D., University College; Jane Holland Turnbull, Royal Free Hospital; and Philip Turner, B.Sc., Guy's Hospital.

Second Division.—William Maurice Anderson and Henry Russell Andrews, M.D., London Hospital; Arthur Hunton Carter, Guy's Hospital; Maud Mary Chadburn, M.D., London School of Medicine and Royal Free Hospital; Joseph Faulkner Dobson, Yorkshire College and General Infirmary, Leeds; William Ferris, St. Mary's Hospital; Caleb Thomas Hilton and John Howell, Guy's Hospital; Mary Muriel Griffin Iles, and Louisa Martindale, Royal Free Hospital; George Norman Meachen, Guy's Hospital; Ethilda Budgett M. Meakin, Christine Mary Murrell, and Ettie Sayer, Royal Free Hospital; Cuthbert Allan Sprawson, King's College; Mary Ariel Stewart, London School of Medicine and Royal Free Hospital; Walter Grahame Stewart, Guy's Hospital; Robert Gordon Strange, St. Thomas's Hospital; Ethel Miller Vernon, Royal Free Hospital; and Eliza Turner Watts, London School of Medicine and Royal Free Hospital.

N.B.—The foregoing lists, published for the convenience of candidates, are provisional only, and are not final until the reports of the examiners shall have been confirmed by the Senate.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees, Michaelmas term, the following candidates were successful:—

FIRST EXAMINATION.

Part I., Chemistry and Physics.—L. J. Austin, Sidney Sussex; I. G. Back, Trinity Hall; D. K. D. Bain, B.A., Trinity; S. Barradell-Smith, St. John's; J. D. Barrin and E. Beaton, Caius; H. A. Browning, St. John's; G. H. U. Corbett, King's; G. L. Cox, Christ's; R. G. Elwell, B.A., Trinity; N. C. Fletcher, Queens'; R. E. French, King's; W. B. Grandage, Clare; H. T. Gray, Trinity; R. E. G. Gray, Pembroke; R. F. V. Hodge, Emmanuel; G. Holroyd, Christ's; C. L. Isaac, B.A., and Q. S. Keat, St. John's; B. T. Lang, Trinity; C. S. Lee, Caius; J. McIntyre, King's; S. M. Mackenzie, Trinity; E. H. Mayhew, Emmanuel; J. B. Mennell, Pembroke; A. H. Miller, Trinity; A. R. Moore, Caius; G. W. de P. Nicholson, B.A., and F. W. M. Palmer, B.A., Jesus; D. W. Roy, Sidney Sussex; R. B. S. Sewell, Christ's; R. W. Sheaf, Downing; G. C. R. Simpson, St. John's; C. Strickland and F. J. Thornton, Caius; W. S. Tresawna, Sidney Sussex; B. Wallis, Trinity; W. H. Williams, Caius; W. P. Williams, Downham; J. L. Wood, Trinity; and L. Worrall, B.A., and F. P. Young, Christ's.

Part II., Elementary Biology.—R. B. Atkinson, Trinity; L. J. Austin, Sidney Sussex; A. L. Baly, Emmanuel; D. W. A. Bull, Caius; G. H. U. Corbett, King's; R. A. Cullen, Clare; G. B. Davis, B.A., Corpus Christi; N. C. Fletcher, Queens'; R. E. French, King's; L. G. H. Furber, Caius; J. R. C. Greenlees, St. John's; C. R. F. Hall, B.A., O. Heath, and S. A. Henry, Trinity; R. F. V. Hodge, Emmanuel; W. R. Honeyburne, B.A., Peterhouse; Q. S. Keat, St. John's; A. A. H. Lawrence, Emmanuel; H. Maclean, Caius; J. B. Mennell, Pembroke; A. H. Miller, Trinity; S. B. Pope, Christ's; W. H. Rayner, Trinity; W. H. Robinson and E. W. Sheaf, Downing; F. Saingleton-Smith, King's; G. C. E. Simpson, St. John's; C. Stanley-Clarke, Caius; B. H. Stewart, B.A., Jesus; F. J. Thornton, Caius; W. S. Tresawna, Sidney Sussex; F. B. Treves and C. Tylor, Caius; C. H. W. Weekes, Trinity; Arthur Wilkin, King's; R. G. Williams, B.A., Caius; and W. H. Woodburn, F. P. Young, and R. F. Young, Christ's.

SECOND EXAMINATION.

Part I., Pharmaceutical Chemistry.—E. D. Anderson, Pembroke; H. M. Aviss, Downing; J. R. Beale, Clare; A. R. Brailey, Downing; A. D. Brunwin, Trinity; A. S. Burgess, Caius; H. C. Cameron, St. John's; M. A. Cassidy, Clare; R. P. Cockin, Caius; A. W. D. Coventon, Trinity; W. I. Cumberlidge, Christ's; G. E. Davidson, B.A., Caius; H. S. Dickson, Christ's; L. Dukes, Trinity; W. G. P. Ellis, M.A., Catharine; H. H. J. Fawcett, Trinity; C. F. Fothergill, Emmanuel; E. Garnsey, Caius; W. Hastings, Christ's; G. L. Hodgkin, Trinity; D. Humphrey, Sidney Sussex; H. B. Jackson, Clare; F. A. Juler, Trinity; J. Lambert, Downing; J. C. Lawton-Roberts, Clare; E. Lloyd, Emmanuel; K. Lucas, Trinity; G. H. K. Macalister, St. John's; J. T. Macnab, Christ's; M. McPherson, Clare; S. A. Owen, Trinity; C. E. Palmer, P. R. Parkinson, and C. F. Parry, B.A., Caius; C. W. Ponder, Emmanuel; E. S. Scott, B.A., and H. Slack, B.A., Pembroke; W. H. Smyth, Emmanuel; W. H. Thresher, B.A., Caius; H. C. Turner, Emmanuel; G. T. Western, B.A., Pembroke; J. D. C. White, M.A., Trinity; R. H. Whitting, King's; F. Worthington, St. John's; E. A. Wright, B.A., H. Selwyn; and S. L. O. Young, B.A., Christ's.

Part II., Human Anatomy and Physiology.—L. E. H. R. Barker, B.A., Caius; E. A. A. Beck, B.A., Clare; A. S. Bradley, B.A., Caius; A. R. Brailey, Downing; P. J. Burgess, M.A., Sidney Sussex; C. Burrows, B.A., Emmanuel; N. C. Carver, B.A., and R. E. Coare, B.A., King's; G. H. Colt, Sidney Sussex; C. R. Crowther, B.A., St. John's; W. H. Dickinson, B.A., Trinity; S. Dodd, B.A., Caius; T. L. Drapes, Sidney Sussex; G. G. Ellett, B.A., Catharine; A. F. Elliott, B.A., Emmanuel; R. A. Ellis, Downing; H. R. Fisher, B.A., Emmanuel; G. D. Franklin, B.A., King's; J. D. H. Freshwater, B.A., Trinity; J. H. Fuge, M.A., H. Selwyn; E. Gardner, B.A., Caius; F. W. Goyder, B.A., St. John's; C. H. Gregory, B.A., Emmanuel; W. L. Harnett, B.A., and A. G. Harvey, B.A., St. John's; G. P. Hawker, B.A., Caius; H. D. Hoffman, B.A., and D. Holroyde, B.A., Trinity; W. W. Holtzmann, B.A., Christ's; L. B. Hopper, B.A., Caius; H. M. Joseph, Trinity; F. I. M. Jupe, B.A., Downing; F. S. Kidd, B.A., and H. D. Ledward, B.A., Trinity; H. B. McCaskie, B.A., Caius; O. May, St. John's; C. W. P. Moffatt, Clare; W. M. Mollison, King's; W. V. Naish, B.A., Emmanuel; C. L. Nedwill, B.A., Trinity; F. D. Nicholson, B.A., King's; J. E. Payne, B.A., Peterhouse; H. Rischbieth, B.A., Trinity; H. J. Robinson, B.A., St. John's; W. T. Scott, B.A., Clare; H. J. Shone, B.A., Emmanuel; J. R. Spicer, B.A., Trinity; H. Statham, B.A., Christ's; S. J. Steward, Downing; G. E. St. C. Stockwell, B.A., King's; W. M. Strong, M.A., Trinity; W. B. Swete-Evans, B.A., Clare; A. W. Wakefield, B.A., Trinity; H. Wales, B.A., Sidney Sussex; E. Ward, B.A., Clare; G. H. L. Whale, B.A., Jesus; F. Whitaker, B.A., Trinity; A. G. E. Wilcock, Caius; J. H. F. Wilgress, B.A., H. Selwyn; and A. F. R. Wollaston, B.A., King's.

THIRD EXAMINATION.

Part I., Surgery and Midwifery.—W. H. W. Attlee, B.A., St. John's; F. G. Bowen, B.A., Caius; G. Browse, M.A., Clare; F. E. Brunner, B.A., Caius; T. Burfield, B.A., Emmanuel; E. R. Clarke, B.A., St. John's; A. H. Davies, B.A., Caius; A. B. Dunne, B.A., Queens'; W. M. Fletcher, M.A., Trinity; H. S. Gabb, B.A., Downing; C. H. Glenn, B.A., Pembroke; J. A. Glover, B.A., St. John's; E. V. Gostling, B.A., Caius; O. F. F. Grünbaum, B.A., and A. C. Hill, M.A., Trinity; T. E. Holmes, B.A., Caius; A. C. Ingram, B.A., St. John's; A. W. Izard, B.A., Trinity; G. S. Keeling, B.A., Caius; C. Killick, B.A., and W. B. Knobel, B.A., Trinity; G. O. Lambert, B.A., St. John's; J. W. Malim, B.A., Christ's; L. J. Paton, B.A., Caius; F. C. Shrubsall, B.A., Clare; W. C. P. Smith, B.A., Downing; H. H. Stiff and W. J. Sussmann, B.A., Caius; T. S. Taylor, B.A., King's; E. D. Telford, B.A., Caius; H. A. Upward, B.A., Christ's; A. Whitmore, B.A., and T. Wood, B.A., Caius; W. H. O. Woods, B.A., Henry Selwyn; and R. T. Worthington, B.A., Trinity.

PLYMOUTH LIFEBOAT SATURDAY FUND.—The sum of £138 was realised in Plymouth as the result of the recent Lifeboat Saturday.

MEDICAL MAGISTRATE.—Mr. Robert Cuff, M.B. Lond., M.R.C.S. Eng., has been appointed a magistrate for the Borough of Scarborough.

HOSPITAL SUNDAY IN PLYMOUTH.—The South Devon and East Cornwall Hospital, Plymouth, has received £740 as the result of the collections on Hospital Sunday (Oct. 29th).

NEW MORTUARY FOR DEVONPORT.—At the meeting of the Devonport Borough Council held on Dec. 15th it was decided to erect a mortuary with post-mortem room, &c., at a cost of about £1400. The present Infectious Diseases Hospital is also to be enlarged.

WEST OF ENGLAND EYE INFIRMARY, EXETER.—At a special meeting of the governors of the West of England Eye Infirmary held at Exeter on Dec. 15th it was decided to sell stock amounting to nearly £8000 for the purpose of proceeding with the erection of the second section of the new eye infirmary.

BRISTOL HOSPITAL SUNDAY FUND.—A meeting in connexion with this fund was held at the Guildhall on Dec. 14th under the presidency of the Lord Mayor. The report showed that the number of churches and chapels at which collections on behalf of the Fund had been made was 183, as compared with 92 in 1898; and the total collections amounted to £1508, against £1128 in 1898. It is hoped that on Sunday, Jan. 28th, 1900, an appeal on behalf of the Hospital Sunday Fund will be made from every pulpit in Bristol and the surrounding districts.

THE annual dinner of the Birmingham medical students, past and present, was held in Birmingham on Thursday evening, Dec. 14th. Mr. W. F. Haslam presided and about 100 guests were present. The toast of "The Queen and Royal Family" was proposed by the chairman who also gave "The Students Past and Present," to which Dr. T. F. Chavasse responded. "The Medical School" was proposed by Sir James Sawyer, and Mr. Jordan Lloyd replied. Mr. A. J. H. Crespi proposed "The Health of the Visitors," and Dr. Bernard Neale responded. "The Officers of the Dinner" was proposed by Dr. R. M. Simon and Dr. J. W. Russell replied. The toasts were interspersed with songs and the gathering was thoroughly enjoyable.

BATH.—At a meeting of the Bath Town Council held on Dec. 12th the mayor (Mr. R. Dickinson, M.P.) moved that the Baths Committee be requested to provide free mineral water bathing for any member of Her Majesty's forces from South Africa disabled or injured whom the War Office or Admiralty might send to Bath. A letter was read from Mr. W. M. Beaumont, M.R.C.S. Eng., who stated that the members of the profession would gladly give their services free of charge to officers and men sent there and added that the families of reservists called out were being treated free of expense by the local medical men. The resolution was unanimously carried, and it was understood that a deputation, including the mayor, would wait upon the War Office in reference to the offer.

THE PRESERVATIVES AND COLOURING MATTERS IN FOOD.

EVIDENCE BEFORE THE DEPARTMENTAL COMMITTEE.

TUESDAY, DEC. 19TH.

THE Committee appointed by the Local Government Board, consisting of Sir Herbert Maxwell, M.P. (Chairman), Professor Thorpe, Dr. Bulstrode, and Dr. Tunnicliffe, to inquire into the question of the use of preservatives and colouring matters in food resumed its sittings to-day when it examined Dr. H. E. Annett, Demonstrator of Tropical Medicine, University College, Liverpool, Professor R. W. Boyce, of the chair of Pathology, University College, Liverpool, and Dr. Robert Bell, Glasgow.

Dr. ANNETT, who was first examined, gave to the Committee the results published in a paper in THE LANCET on Nov. 11th, 1899, of his experiments with young kittens and milk containing formalin and boric acid. He emphasised the fact that he experimented with kittens which had just attained the age when they were able to lap milk, this, he said,

approximating as nearly as possible to the condition of young infants. With formaldehyde present in the milk in the proportion of 1 in 50,000 he found the retarding effect on the kittens, as estimated by growth, to amount to about 29 per cent., in the proportion of 1 in 25,000 to amount to about 39·6 per cent., and in the proportion of 1 in 12,500 to amount to 69·1 per cent. He had not yet gone into the question whether the preservative had this retarding effect directly through the digestive tract or by making the food—the milk—indigestible, but he referred the Committee to the paper on the influence on health of chemical preservatives in food by Mr. A. G. R. Foulerton, published in THE LANCET on Dec. 9th, 1899, in which he said results were given showing that formaldehyde had a hardening effect upon fibrin as well as some retarding action upon digestive ferments. Dr. Annett went on to say that the experiments he had made as to the preservative action of formalin led him to conclude that the preparation of 1 in 50,000, which had been stated to be able to preserve milk for a period of 48 hours did not always do so. A great deal depended on the temperature, on the number of organisms present in the milk, and on the time which had elapsed since the milk was taken from the cow. He had found that sometimes a preparation of 1 in 25,000 of formalin would not preserve milk for 24 hours and certainly not for 48 hours at temperatures approaching summer temperature. A preparation of 1 in 12,500 he had found to be satisfactory for 48 hours. The results from boric acid had been rather more serious. The five kittens treated with boric acid, in the proportion of 80 grains to the gallon, all died about the end of the third or fourth week, having become considerably emaciated during the period. The five kittens dosed with milk containing 40 grains to the gallon also showed considerable emaciation, and all died before the end of the fourth week. This proportion of 40 grains to the gallon was a little in excess of the quantity generally stated to be able to preserve milk for 48 hours. In the case of the control kittens they showed considerable increase in weight. The conclusion which he had drawn from his experiments was that the presence of these preservatives in the quantities mentioned must be injurious—he would not say to adults, but certainly to infants.

By Dr. BULSTRODE: He had 40 or 50 kittens at a time and it would be difficult to say how much milk any one of them consumed; he should estimate, however, that 10 kittens consumed about a quart per day of boracised milk amongst them. He did not continue his experiments with the control kittens because he found that as they grew older the kittens were less susceptible, but he assured the Committee that he meant to go on with his experimental work. He considered the inferences in his cases to be fairer than the inferences to be drawn from the experiments of Fouleron and Rideal because in the latter experiments kittens of three months were used, these being practically full grown and therefore not comparable with the case of children. As to the action of these preservatives upon ferments the experiments had all been done *in vitro*, and he thought that considerably more evidence could have been obtained if experiments had been performed upon young animals. He could easily conceive a number of experiments of this kind. Not only so, but the ferment in the experiments recorded by Foulerton and Chittenden was a ferment separated chemically and the freshly secreted ferment was admittedly much more sensitive and much more active. Even Foulerton, in THE LANCET of Dec. 9th, 1899, stated that the action was much more decided in the case of more active ferments. In his paper in THE LANCET of Nov. 11th, 1899, he said: "It is easy to conceive that the great infant mortality-rate from diarrhœa of many of our large towns may be closely connected with the practice, especially during the summer months, of systematically 'doctoring' milk by means of preservatives." He based that statement on the results obtained by Foulerton and on his own experiments. He thought that the presence of the preservative might account directly for the large infantile mortality from diarrhœa in the large towns, or it might produce such a condition of the digestive tract as to make possible the multiplication of the life of a specific organism, if such were present in infantile diarrhœa. In his opinion the use of formaldehyde and boric acid in milk should be prohibited. Milk could be preserved by other means and the use of these preservatives must tend to carelessness and insanitary conditions, and, further, it would permit of the sale of milk already well advanced towards a sour condition, in which condition it was admittedly injurious to health and especially so in the case of infants.

By Dr. TUNNICLIFFE: If he were asked to explain the difference between the results he had obtained and those of other observers he should say that for these experiments animals must be taken which corresponded as far as possible to the human infant. At and after three months cats were practically immune to the action of these preservatives and therefore it was necessary to experiment with young kittens.

Professor BOYCE explained that he was one of the public analysts for the city of Liverpool. There had been a successful prosecution, and it was this case which specially drew his attention to the question of preservatives in food. He desired in connexion with Dr. Annett's work to emphasise the importance of experiments upon living animals in determining the action of preservatives, and especially of selecting animals which conformed in their metabolism as far as possible to the human being. In his opinion the young kitten which had just left the breast was the most suitable animal for experiment. The selection of dogs or, as had been done, of guinea-pigs for this class of experiment was, he thought, almost worthless. He had watched the kittens for half an hour at a time and even longer in their cages and he had observed that they had a repugnance for the food containing the preservative. At first the two classes took to their food with equal avidity, and while the eagerness for it continued in the case of the kittens supplied with non-formalised milk, in the case of the other class there was unquestionably a falling off in appetite. The formalised milk, in fact, appeared to lose much of its attractiveness. The conclusion he had come to was that the preservative was injurious in the quantities stated. He had visited various places on the continent and tried to get information as to whether analyses had been conducted for determining the presence of either formaldehyde or boric acid in milk, but without success.

By Dr. BULSTRODE: He should be disposed to say that adults in a normal state of health were immune, but while he said so, he considered it unfair that a person should run the risk of unknowingly taking these drugs in his food. In the case of a patient it was unfair both to the patient and the medical man attending him. He had made experiments as to the multiplication of bacteria in milk in different states after it was taken from the cow. Recently he had been conducting experiments to ascertain the proportion of what might be regarded as pathogenic bacteria in milk—namely, bacillus coli and bacillus enteritidis sporogenes—and he found that in milk which appeared perfectly sweet these two organisms, both resistant organisms, might be present in considerable quantity; and while formalin or boric acid might to a great extent inhibit the growth of the simple bacteria the chances of its inhibiting the growth of the bacillus coli or the bacillus enteritidis sporogenes were very remote, or at any rate the preservative would require to be present in such a large quantity as would make the milk objectionable to the senses.

By Professor THORPE: His experience was that formaldehyde was exceedingly and directly irritating. His laboratory boy who worked with it was continually incapacitated from work by the action of formaldehyde on the mucous membrane of his eyes, and he himself had experienced the irritating action of boric acid. He did not think there would be any great practical difficulty in carrying out an enactment requiring the presence of the preservative to be declared by the vendor, and in his opinion such an enactment would be beneficial in the public interest, and would solve a great deal of the difficulty, though his desire was to see these preservatives prohibited altogether.

Dr. ROBERT BELL said he had had considerable experience of borax and boric acid in medical and surgical treatment, and he had failed to find any bad effects upon the human system. Given in moderate doses boric acid had a most beneficial effect. He knew an old gentleman in Glasgow who suffered from putridity of the urine, and who had been kept alive for four years by taking 10 grains three times a day. For 18 years his family had taken milk with boric acid, and he assured the Committee that during all these years there had been no illness in the house. He knew another gentleman in Glasgow who for years and years had never been without a piece of borax in his mouth. He saw no reason why the use of boric acid in milk should be prohibited. He had never prescribed an unlimited quantity, but he should have no hesitation himself in taking 30 grains per day. Quantity for quantity common salt or saltpetre did very much more harm to the human system than boric acid. About four years ago he happened to be engaged in an important surgical operation—it was the removal of a large tumour from a woman. The tumour weighed 58 pounds and the pedicle was as thick as his wrist. He simply put pounds of boric acid over that pedicle—between seven and eight pounds during the treatment—and there was not the slightest effect upon the system, though, of course, a great deal of it must have been absorbed into the system. He admitted that this was the most extreme case with which he had had to do.

By Dr. BULSTRODE: He was quite aware that some medical men deprecated the use of boric acid, but what he gave the Committee was simply his own experience. If the dose in the British Pharmacopœia had been reduced from 10 to 30 grains to five to 15 grains, then all he would say was that he considered 10 grains three times a day a sufficient dose to arrest the condition of the urine. He could not say that 50 grains a day would do any positive harm, but he thought it would be absurd to prescribe such a dose. Asked whether if it were shown that this quantity might be taken unawares in food he would still say there was no need for prohibition, Dr. BELL replied that he would not legislate upon an isolated case of this kind, because in his opinion boric acid did a great deal more good than it did harm.

By the CHAIRMAN: He thought it unnecessary to have the presence of preservatives declared by the vendor, his opinion being that such declaration would prejudice the public against the use of boric acid.

The CHAIRMAN: We have had several members of your profession before us who have given their deliberate opinion, supported by the results of experiments conducted by them, that boric acid in uncertain quantities is fraught with danger to the consumer. Dr. BELL: I should like to know what the symptoms of danger are for I have never been able to trace them. I have experimented very extensively on the subject and my results have been all good results. But for boric acid I think we should have been in a very much worse position than we are at the present moment.

By Professor THORPE: He recommended the sterilisation of milk, but he recommended also the subsequent addition of a quantity of boric acid to make things doubly sure.

(To be continued.)

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, E. W., F.R.C.S. Eng., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Slough Urban District Council.

ARBUCKLE, H. W., M.D. Aberd., L.F.P.S. Glasg., L.R.C.P. Edin., D.P.H. Camb., has been re-appointed Medical Officer by the Thorne District Council.

BENNETT, W. F. C., L.R.C.P., L.R.C.S. Edin., has been appointed Assistant House Surgeon to the Rotherham Hospital and Dispensary, vice Arthur H. Gaddsden, resigned.

BEVERIDGE, R. E., M.B., C.M. Glasg., has been appointed Police Surgeon, Sunderland.

COLLIER, JAMES, M.D., M.R.C.P., B.Sc., has been appointed Registrar to the National Hospital for the Paralysed and Epileptic, Queen-square, London, W.C., vice A. J. Whiting, resigned.

COLVILLE, NEIL, M.B. Toronto, has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, London, S.W.

CULLIN, R. B., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer by the Tiverton Town Council.

DAY, F. W. H. L., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Hitchin Rural District Council.

ELLIMAN, A. G., L.R.C.P. Lond., M.R.C.S., has been appointed *pro tem.* Medical Officer by the St. Saviour's Board of Works, London, vice J. Herron.

GREENSILL, J. H., M.R.C.S., has been appointed Medical Officer of Health for the Martley Rural Sanitary District.

HARVEY, F., M.R.C.S., has been re-appointed Medical of Health by the Padstow Urban District Council.

HAYES, G. CONSTABLE, F.R.C.S. Eng., has been appointed Assistant Ophthalmic and Aural Surgeon to the Leeds General Infirmary.

KENWOOD, H. R., M.B. Edin., L.R.C.P. Lond., D.P.H. Eng., has been re-appointed Medical Officer by the Finchley Urban District Council.

LUNT, D. C. M., L.R.C.P. Irel., L.R.C.S. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Lymm Urban Sanitary District, vice W. W. Williamson.

MACCALLAN, A. F., B.A., M.B., B.C., F.R.C.S., L.R.C.P., has been appointed Junior House Surgeon to the Royal London Ophthalmic Hospital, City-road, E.C.

NEWBY, T., M.D. St. And., M.R.C.S., has been appointed Medical Officer of Health by the Great Grimsby Town Council.

PARSONS, W. BROCK, M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the North-West London Hospital, Kentish Town-road, N.W.

PUGH, R., M.B., Ch.B. Edin., has been appointed Senior Assistant Medical Officer for the Birmingham City Asylum.

ROBERTS, C. HUBERT, M.D. Lond., F.R.C.S. Eng., M.R.C.P., has been appointed Physician to Out-patients, Queen Charlotte's Lying-in Hospital, London.

RUSSELL, C. H., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer by the Yarmouth Corporation, vice J. Bately, resigned.

SMITH, M. H., L.R.C.P. Lond., M.R.C.S., has been appointed by the Home Secretary a Deputy Medical Officer in the Prison Service.

SMITH, W. E., M.B., C.M., has been appointed Senior House Surgeon to the Royal London Ophthalmic Hospital, City-road, E.C.

STANWELL, ST. JOHN, M.B., M.C. Edin., M.R.C.S., has been appointed Surgeon to the Stamford and Rutland General Infirmary, Stamford, vice R. Farrar, resigned. Also appointed by the Postmaster-General as Surgeon to the Post Office at Stamford.

TURNER, F., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for the Buxton Urban Sanitary District.

TYRRELL, F. A. C., B.A., M.B., B.C., M.R.C.S., L.R.C.P., has been appointed Junior Surgical Officer to Out-patients, Royal London Ophthalmic Hospital, City-road, E.C.

YOUNG, EDWARD HERBERT, M.D. Durh., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Lond., has been appointed Medical Officer of Health by the Okehampton Rural District Council.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, London.—Dental Surgeon.

BRISTOL ROYAL HOSPITAL FOR SICK WOMEN AND CHILDREN.—House Surgeon. Salary £100 per annum, with rooms and attendance (not board).

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at the rate of £50 per annum, with board and residence in the hospital.

CITY AND COUNTY OF BRISTOL.—Medical Officer for the Workhouse for 12 months. Salary £250 per annum, with an allowance of £30 per annum for rent. Apply to the Clerk to the Guardians, St. Peter's Hospital, Bristol.

CITY DISPENSARY, Watling-street, London.—Physician.

CITY OF YORK.—Medical Officer of Health. Salary £400 per annum. Apply to the Town Clerk, Guildhall, York.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Resident House Physician for 12 months. Salary £80 per annum, with apartments and board.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Third Assistant Medical Officer. Salary £175 a year, without board or lodging.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at the rate of £30 per annum, with board, residence, and washing.

GENERAL INFIRMARY, Leeds.—Resident Surgical Officer. Salary £100 per annum, with board, residence, and washing. Corrected notice.

HOSPITAL FOR WOMEN, Soho-square, London.—Assistant Surgeon.

LEICESTER INFIRMARY.—House Physician for 12 months. Salary £100 per annum, with board, apartments, and washing.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL, Lewes.—Resident Medical Officer. Salary £100 per annum, furnished apartments, board, coal, gas, and attendance.

LONDON HOSPITAL, Whitechapel, E.—Dental Surgeon.

MIDDLESEX HOSPITAL, W.—Assistant in the Cancer Research Laboratories. Salary £100 per annum, with an honorarium of £50, after his second year of office.

NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Resident Medical Officer and Registrar. Salary £100 per annum, with apartments, board, &c.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—House Physician. Salary £100, with board and apartments.

NORTH LONDON HOSPITAL FOR CONSUMPTION, Hampstead.—Assistant Resident Medical Officer for six months. Honorarium at the rate of £60 per annum. Also Resident Medical Officer for 12 months. Honorarium £100.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £120 per annum. Special arrangement for board, &c.

PARISH OF GAIRLOCH, Ross-shire.—Medical Officer. Salary from the Parish Council £200 per annum, besides private practice. To reside at Poolewe. Apply to Mr. James Mackintosh, Inspector of Poor, Poolewe.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, London.—Registrar and Anæsthetist for six months. Salary at the rate of £60 per annum.

SEAMEN'S HOSPITAL SOCIETY, "DREADNOUGHT," Greenwich.—Senior House Surgeon for the Branch Hospital, Royal Victoria and Albert Docks, E. Salary £75 per annum, with board and residence, and an additional £25 per annum, conditionally.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, London.—Honorary Assistant Medical Officer.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Senior Resident Medical Officer for one year. Salary £80 per annum, with residence in the hospital, board, and washing.

ST. MARYLEBONE GENERAL DISPENSARY, Welbeck-street, London.—Resident Medical Officer. Salary 100 guineas per annum and an annual increase of 10 guineas to a maximum of 120 guineas, with furnished apartments, attendance, coals, and light.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL, London, S.E.—Demonstrator of Physiology.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £50 a year, with board, lodging, and washing. No stimulants supplied, but in lieu thereof £6 per annum allowed.

THREE COUNTIES ASYLUM, near Hitchin.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance. Unmarried. Apply to the Clerk, St. Neots, Hunts.

Births, Marriages, and Deaths.

BIRTHS.

PIKE.—On Dec. 15th, at Flush Cottage, Heckmondwike, Yorkshire, the wife of Norman H. Pike, M.B., B.S., of a son.

ROBERTS.—On Dec. 19th, at Kingsdown, Church-road, Forest Hill, S.E., the wife of Francis Henry Roberts, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

VOSPER.—On Dec. 15th, at Gondar-gardens, West Hampstead, the wife of Percy Vosper, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

GREEN—WARD.—On Dec. 14th, at All Saints', Clapham Park, Howard Green, M.R.C.S., L.R.C.P., son of the Rev. E. P. Green, M.A., of Holmwood-gardens, London, to Eva Emma Ward, daughter of the late Joseph Ward, of Boston, Lincolnshire.

KINGSFORD—BASSETT.—On Dec. 14th, at Winterbourne-Houghton, Dorset, Bertram Harold Kingsford, M.B. Lond., of Woking, to Mildred Bouchier Tilney Bassett, third daughter of the late Rev. Francis Tilney Bassett, Vicar of Dulverton, Somerset, and Prebendary of Wells.

MARTIN—DICKSON.—On Dec. 14th, at Ormond Quay Presbyterian Church, Dublin, Robert M. Martin, of Ulster-terrace, Stillorgan Park, co. Dublin, to E. Winifred Dickson, M.D., F.R.C.S. Irel., second daughter of the Right Hon. Thomas A. Dickson, Drogheda.

RICHARDSON—BOWRING.—On Dec. 12th, at Emmanuel Church, Clifton, Charles Boards Richardson, M.D., of Hove, to Elizabeth (Lilie), fourth daughter of the late Benjamin Bowring, of Plash House, Mark, Somerset.

SAWERS—BAILEY.—On Dec. 12th, at St. Peter's Church, Stoke-on-Trent, John Lorimer Sawers, M.D., third son of the late Robert Orr Sawers, of Calcutta and Blackheath, to Charlotte, eldest daughter of Arthur Bailey, of Chebsey and Stoke-on-Trent.

WEDMORE—KERSEY.—On Dec. 6th, at the Minster, Warminster, by the Rev. R. W. Legge, M.A., curate of the parish, Charles Ernest Wedmore, M.A., M.B. Cantab., M.R.C.S., son of the late Thomas Wedmore, J.P., of Druid Stoke, near Bristol, to Caroline, daughter of the late Frederic Kersey, of Romsey, Hants.

DEATHS.

BRODIE.—On Dec. 16th, at 5, Woodside-place, Glasgow, John Ewan Brodie, M.D., Brig.-Surg. C.V.I.B. and S.M.O. Clyde Defences.

BUSS.—On Dec. 6th, in his ninetieth year, Henry Buss, M.D., M.R.C.S., of Amwell, Ealing, late of Blenheim Lodge, Chiswick, and Shoreditch, author of "Wanderings in the West" (Poems), 1872; "Eighty Years' Experience of Life," 1892. Interred at Highgate Cemetery.

FLINT.—On Dec. 13th, at Orford, Suffolk, Frederick Sayer Flint, L.R.C.S., L.R.C.P., age 31.

FROST.—On Dec. 13th, at 30, Ladbroke-grove, W., Charles Maynard Frost, F.R.C.S. (formerly of Ladbroke-square), aged 85 years.

RUSHER.—On Dec. 15th, James Golby Rusher, of Pershore, aged 83 years.

THORNE.—On Dec. 18th, at his London residence, Sir Richard Thorne Thorne, K.C.B., F.R.S., F.R.C.P., aged 58, of Inverness Terrace and Fairlawn, St. John's, Woking, Principal Medical Officer of the Local Government Board. Friends will kindly accept this the only intimation.

WARING.—On Dec. 12th, at his residence, 8, Eaton-road, Hove, Dr. Francis John Arthur Waring, Retired Surgeon R.N., deeply mourned.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"THE LABOURER IS WORTHY OF HIS HIRE."

To the Editors of THE LANCET.

SIRS,—On behalf of the Hartlepool Medical Society we beg to submit to you the following report of an inquest together with the editorial comments of two local papers. The burden of our complaint is that the coroner founded his remarks upon an *ex-parte* statement, the surgeon who first saw the case not having been called as a witness. We herewith append his statement of the actual facts:—

"On Oct. 28th, 1899, while acting as assistant to Dr. Biggart, I was called out shortly after 8.30 P.M. to attend a woman in Burbank-street who was said to have met with an accident. On getting to the house I found the woman lying on a bed, having been removed from the scene of accident to an adjoining house. My first question was as to the circumstances of the woman, and finding she was a pauper I asked who was going to pay for attendance. Some indistinct assurance was made that I should get paid. I then examined the woman and found her to be suffering from a fracture through the neck of the right femur. I told those in the room that she ought to be taken to the hospital, and as they did not seem able to afford a cab I promised to communicate with the police to see if they could do anything in the matter. Immediately on getting home I telephoned the police and told them the facts of the case and recommended her removal to the workhouse hospital. The police accordingly communicated with the relieving officer and district medical officer and she was as soon as possible removed in the ambulance van. The case was not an urgent one, the fracture being the common one in old people resulting from a fall.

(Signed)
"NEIL ROBSON, M.B., C.M."

Will you kindly give us your opinion as to the remarks of the coroner as bearing on the ethics of the case?

We are, Sirs, yours faithfully,
S. BIGGART, M.D. Glasg.,
Honorary President, Hartlepool Medical Society;
HENRY M. MACGILL, M.D. Edin.,
Honorary Secretary, Hartlepool Medical Society.

*** A report of the inquest and the editorial comments in the *Northern Daily Mail* are enclosed and the editorial remarks of the *Northern Guardian*. The report of the case as given in the *Northern Daily Mail* shows that the evidence of a man named James Cameron was taken as to what occurred when Dr. Robson arrived at the case and that Dr. Robson was not called as a witness. The coroner, in summing up, is reported by the paper to have said that "he had no hesitation in saying—and he had no doubt that the jury would be quite agreed—that this rule of medical ethics should invariably be suspended where there was a case of human suffering that ought to be attended on humane grounds alone independent of professional rules." He seems to have meant by a "rule of medical ethics" the obvious fact that no medical man need attend a case unless he can obtain reasonable assurance that he will be paid. The coroner should have gone on to say that medical men habitually attend cases without hope of payment when their presence is wanted on a matter of urgency and should have explained that this case was not one of urgency. He may say that he did not know there was no urgency in the case, but he would have known if the medical man whose conduct was under discussion had been called to state the true facts, *as he should have been*. The jury, we are glad to say, returned a verdict of "Accidental death" and we congratulate them upon their fairness. As a rule, on the occasions when we have to record the case of an inquest under these circumstances a rider has been attached to the verdict accusing some medical man of gross inhumanity. We have protested frequently against this proceeding which is obviously made more likely by the line taken by the coroner at Hartlepool in discussing the conduct of the medical man without hearing the medical man's story. Although we repeat ourselves (see THE LANCET, June 24th and Sept. 23rd of this year) we must insist that in matters of real urgency it is almost unknown for a medical man to refuse attendance. Although a large proportion of a medical man's practice is always unpaid and although no inconsiderable section of the medical profession, oppressed by medical aid associations, do their work for beggarly fees, yet when it is made clear to the medical man that his presence is needed at once to stand between death and a fellow creature he goes. He does not think of his fee: he goes. But where the imminence of the situation is not made clear he does not necessarily attend the case without a fee. It is not only unfair to expect the reverse, but—and this is the point upon which we desire to lay emphasis—it is unfair to those of the community who do pay him that he should be at the beck and call of those who do not.—ED. L.

HOW DISEASE IS SPREAD.

AT the Middlesbrough Police-court during the week two cases of failing to comply with the regulations respecting scarlet fever were investigated. In the first case a man who had had scarlet fever in his house removed to another house without disinfecting the bedding, clothing, and other things which had been in contact with the patient. In the second a man was charged with neglecting to give notice to the sanitary inspector that his son was suffering from scarlet fever. Each offender was fined 20s., including costs. It is a little extraordinary to the medical mind that such cases as these should occur now that the Infectious Diseases (Notification) Act has been in existence for 10 years. It would be natural to expect that the public is now aware both of the regulations of that Act and their reasons, but such expectations are premature.

LES FOUS SONT PLUS NUISIBLES QUE LES MÉCHANTS.

THE following letter under the title of a "Remedy for Diphtheria" appears in the *Western Mail* of Dec. 4th, 1899:—

Sir,—I trust your will favour me by allowing this to appear in your valuable paper. Hundreds die annually of diphtheria, whereas by the small expenditure of one penny it may be cured, and without the aid of a doctor. When the first symptoms of the disease appear give the patient half a teaspoonful of flowers of sulphur, to be obtained of any chemist, which should be kept in the mouth and swallowed as it dissolves, and keep on repeating this day and night without hardly any interval for five days. During this term it is a battle for life, and at the end of that time the patient is out of danger, but it would not be amiss to take a little flowers of sulphur for another two or three days. Diphtheria has been in my family several times and I have also given the recipe to many others. It has never been known to fail where the patient has carried out the foregoing instructions. I am, &c.,

5, Llantwit-street, Cardiff, Nov. 30. DAFYDD MORGANWG.

Fools, as the French proverb says, do more harm than wicked people, and we acquit the author of the above letter of deliberate wickedness. He may think that he has found a specific remedy against diphtheria, for a man who believes that sulphur is soluble in the mouth will believe anything.

"PREPOSTEROUS."

THE following paragraph appeared in the *Evening News* of Tuesday, Dec. 12th, and the *Sun* of the same date gives a similar report under the heading "Preposterous."

JUDGE FRENCH ON DOCTORS' BILLS.

In the Bow County Court to-day Alice Webb, a domestic servant, of Canning-town, claimed £50 damages from the Great Eastern Railway for a contused back and knee, injuries sustained by being knocked down by a porter at Tidal Basin Station. The doctor's bill came to £3 13s. 6d., the visits being charged at 2s. each.

Judge French: Preposterous. A shilling a visit is quite enough for attending a servant girl. I shall only allow a guinea for the doctor's bill and 10 guineas damages for the plaintiff.

Council for defendant company: We offered £20, but they would not accept it.

Judge French: A very generous offer indeed.

The business of a judge is to adjudicate and not to use expletives. It is indecent of Judge French to call a fair claim a preposterous one. To do so shows a bias against the medical profession and the occupant of a judicial position abuses the great trust confided to him when he displays such prejudice.

"OBSTRUCTION TO THE INFERIOR VENA CAVA, PROBABLY SYPHILITIC."

To the Editors of THE LANCET.

SIRS,—In reply to "X. Y. Z.," the treatment of the case was as follows. The patient was put on steadily increasing doses of iodide of sodium until 80 grains were taken daily. To this were added three-drop doses of tincture of nux vomica. A five-grain Plummer's pill was taken every night for four weeks, which after an interval of two or three weeks was repeated. Mercurial ointment was rubbed in over the lump at the back of the neck nightly. If "X. Y. Z." is interested in the case and was not present at the Clinical Society I shall be happy to arrange for his seeing the patient.—I am, Sirs, yours faithfully,

Dec. 20th, 1899. CHAS. W. CHAPMAN.

THE PHYSICIAN IN SHAKESPEARE.

To the Editors of THE LANCET.

SIRS,—Dr. Poore, in a note appended to his admirable Harveian Oration (THE LANCET, Oct. 21st, 1899), mentions a remark of the late President of the Royal College of Physicians of London "that Shakespeare's appreciation of our profession was not very flattering." I believe the medical profession has no cause of complaint against Shakespeare. Although it is very probable that the celebrated Dr. Caius would not be very flattered with the abiding fame of his name in the *Merry Wives of Windsor*, the comic traits of his figure in Shakespeare's play belong all to the Frenchman and not at all to the physician. Except the mad Timon's words, "Trust not the physician," &c., whenever the medical profession is mentioned in Shakespeare's plays he pays a high tribute to science and honesty. The Countess of Roussillon thus mentions Helena's father, the physician Gérard de Narbon: "This young gentlewoman had a father (O, that *had!* how sad a passage it is!) whose skill was

almost as great as his honesty; had it stretched so far would have made nature immortal, and death should have play for lack of work. Would, for the king's sake, he were living I think it would be the death of the king's disease" (*All's Well that Ends Well*, i., 1). The doctor of physic in *Macbeth* is clever, open-minded; Cornelius in *Cymbeline* is careful and sage. Very few authors have ever drawn such a good delineation of the mind of the physician who is fond of his profession as Shakespeare in Cerimon:—

> "'Tis known I ever
> Have studied physic, through which secret art,
> By turning over authorities, I have
> (Together with my practice) made familiar
> To me and to my aid the blest'd infusions
> That dwell in vegetives, in metals, stones;
> And I can speak of the disturbances
> That nature works, and of her cures, which gives me
> A more content in course of true delight
> Than to be thirsty after tottering honour,
> Or tie my pleasure up in silken bags
> To please the fool and death."—*Pericles*, iii., 2.

Was Cerimon, who is mentioned in the "persons represented" in *Pericles* as "a lord of Ephesus," not a worthy predecessor of Lord Lister?

I am, Sirs, yours faithfully,

Budapest. EUGÈNE FARKAS, M.D.

IMPROPER ADVERTISEMENT.

To the Editors of THE LANCET.

SIRS,—A patient of mine handed to me the enclosed notice which he had received by post, asking me what I thought of this kind of advertisement. He added that he neither knew nor ever heard of Dr. Karl Fürth. But though quite outside the ranks of the medical profession himself, he was so struck with the sender's want of good taste that he made inquiries of the porter of the mansions where he inhabits a flat, when he learned that several other tenants were the recipients of the same advertisement. It looks as if Dr. Karl Fürth selected the German names from a directory and made the bearers thereof the objects of his advertisement of a change of address without any respect for his professional brethren or their patients. Ought he not to be made to understand that a foreigner in obtaining admission to the Medical Register takes upon himself the duties imposed by the General Medical Council and by the consensus of professional opinion? If such violation of professional etiquette emanates from Harley-street, how can we wonder if the practitioners in less obvious centres of light and leading do not always strictly respect the medical code of honour?

I enclose my card and am, Sirs, yours faithfully,

Dec. 12th, 1899. ETHICS.

*** The notice referred to is as follows:—

CHANGE OF ADDRESS.

DR. KARL FÜRTH.

64, Harley-street, Cavendish-square. W. 94, Harley-street, W.

With Dr. Fürth's Compliments.

Obviously such notices of change of address should be sent only to a medical man's patients. If disseminated broadcast they constitute a form of improper advertisement.—ED. L.

THE MOUNTAIN COPPER COMPANY.

To the Editors of THE LANCET.

SIRS,—I should like to call the attention of medical men to the above company and to advise anyone against accepting an engagement with them as medical officer. The merest courtesy and consideration from the management here is conspicuous by its absence and the entire medical department is in a very unsatisfactory condition. The chief hospital is a miserable building and deservedly in bad odour with the employés. A letter was published in THE LANCET of July 24th, 1897, from Mr. K. W. Millican, a former English medical officer here, and I regret exceedingly that I did not take advantage of his warning. I shall be glad to give further information to anyone contemplating accepting the post out here.

I am, Sirs, yours faithfully,

DENNYS J. DRAKE, M.R.C.S. Eng., L.R.C.P. Lond.

Keswick, Shasta Co., California, U.S.A.,
Nov. 10th, 1899.

THE ANGLO-AMERICAN INSURANCE COMPANY.

To the Editors of THE LANCET.

SIRS,—May I explain what I know about the above? I took a fancy to the prospectus partly because of the names which were written (not printed) upon it, but chiefly because it certainly contained some novel features *re* accidents and employers' liability which I considered would meet a great demand. In my opinion the promoter was not a rogue, but a fool, for from the amount of capital which had been underwritten I believe that if the company had ever been floated he would have made a fortune out of it instead of about £3000, but he spent all the money he got out of us and then was unable to raise the funds for registration, and financially he died without giving birth to his offspring. Some of those who were bitten are now, I believe, trying to recover their loss by promoting a company under another name and upon somewhat similar lines, but with what success I know not. As to the Anglo-American, with which, by the way, America never had anything to do, it is as dead as Queen Anne; all our money has been spent and it is doubtful whether we could recover from the promoter even if he had any money left or whether we could successfully prosecute him even if we knew where to find him.

I am, Sirs, yours faithfully,

Dec. 20th, 1899. ANOTHER VICTIM.

THE FINAL EXAMINATION FOR THE BACHELOR DEGREE IN MEDICINE AT LONDON UNIVERSITY: A GRUMBLE."

To the Editors of THE LANCET.

SIRS,—May I add my testimony to that of "A Successful Candidate," which appeared in THE LANCET of Dec. 16th, with regard to the arrangements of the *viva voce* parts of the above examination. Though my experience was not so bad as his, presumably because candidates are taken in alphabetical order, and I came fairly high in the list, yet anyone could see that the arrangements were as bad as they could possibly be. Your correspondent compares the arrangements with those of the Conjoint Board, all the examinations of which are worked admirably simply because the arrangements are carried out in a systematic way. There is no system at the M.B. examination of the London University and the candidates suffer accordingly. With regard to the *viva voce* examinations themselves, I can only say that I am sorry for the man who has not done well in his papers and hopes to pull up in the oral tests.

I am, Sirs, yours faithfully,

Dec. 19th, 1899. ANOTHER SUCCESSFUL CANDIDATE.

THE MACKEY FUND.

To the Editors of THE LANCET.

SIRS,—The following subscriptions have been received by me on behalf of the widow of the late Mr. Stephen Mackey: Dr. Clifford Allbutt, Cambridge, £1 1*s.*; Mr. Chas. Terry, Bath, £2 2*s.*; Dr. Jas. Barry Ball, Wimpole-street, £2 2*s.*; Dr. Leonard Dobson, Kensington, £1 1*s.* I should be very grateful for further subscriptions as Mrs. Mackey is left without any means at all.

I am, Sirs, yours faithfully,

LEONARD DOBSON, M.D. Lond.

59, Addison-gardens, Kensington, Dec. 19th, 1899.

AN UNSAVORY STORY.

WE have received the following "letter" from a correspondent whose name we suppress. We also on this occasion omit the name of the medical man whose professional behaviour is severely arraigned.

To the Editors of THE LANCET.

SIRS,—I should be glad of your advice on the following subject A brother of mine, aged 21 and rather young for his age, on the advice of a fellow-worker went unbeknown to his family to a man, —— of —— street, whose advertisement taken from *Lloyd's Newspaper* I enclose. The doctor agreed to treat my brother for 2*s.* 6*d.* a visit, but on the second visit the doctor told him that he was in too serious a state to treat for such a fee. He said he was a specialist and that my brother would have to go through a course of treatment which would cost £14 14*s.* My brother told him that his earnings were 15*s.* a week and that he had not the means to pay such fees, but had £7 saved. Finally he got £7 7*s.* out of him. After seeing him six times my brother got much worse and told me about it. I took him to our own doctor, who told me what he was suffering from and said that he would have to undergo an operation. I called on the advertising medical man and asked him to refund the money and told him the state of the case and that we could not afford to pay both doctors. He asked me to wait a minute and left the room. On his return he kept me in conversation until a bell rang and then advised me to leave his house. I was naturally indignant and asked him what he meant; he opened the door and called in a policeman, said I had threatened him and refused to leave the house. I went, and he told me on parting that my brother was suffering from the result of his own folly. This is not the case as our doctor can prove. What I want to know is is he a qualified man and a recognised specialist? Have we any redress and is the matter worth putting into a solicitor's hands? I am told that he is well known as an extortioner and that such cases as mine, or rather ours, are very frequent. Awaiting your kind reply, which will be gratefully received,

I am, Sirs, yours truly,

A.B.C.

At first sight the story read as though a disappointed patient wanted to exact from a medical man the return of a fee duly earned and when we learned from the Register that the "doctor" referred to in the case was actually a registered practitioner we made sure that this was the case. But when we found that this registered practitioner was advertising himself in a lay paper of wide circulation as a specialist in diseases of the urethra, prostate, and bladder, the matter began to assume a different complexion. A man who would thus trangress the laws of conduct which guide his profession would not be likely to be very scrupulous in his behaviour towards the public. We therefore recommend that the matter should be put into the hands of a solicitor and the details of the case also made known to the General Medical Council.

UNADVISABLE PUBLICITY.

AN advertisement of the Crown Hill Dairy has been sent to us in which the medical supervisor's name and academical distinctions are included. We call the attention of the medical man in question to the publicity which his name and style thus receives and trust that he will point out to the Crown Hill Dairy the advisability of altering the form of their advertisement.

Dr. C. W. Buckley.—The Honorary Secretary of the Jenner Society is Dr. F. T. Bond, 3, Beaufort-buildings, Gloucester. A list of books and pamphlets which will be useful to our correspondent was published in THE LANCET of Oct. 21st, 1899, p. 1141.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 21st, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 15	29·91	N.	...	36	36	29	Fzn.	32	Foggy
,, 16	29·91	S.E.	0·01	49	43	28	Fzn.	36	Foggy
,, 17	29·35	E.	...	39	39	28	Fzn.	31	Overcast
,, 18	30·04	ENE	...	45	42	31	38	39	Overcast
,, 19	30·13	S.E.	...	42	42	38	37	38	Overcast
,, 20	30·14	E.	...	42	42	37	38	39	Foggy
,, 21	30·29	E.	...	41	41	38	37	38	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.) Cancer (2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College 2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (30th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Scotsman, Sun (London), Leicester Daily Post, New York Herald (Paris), Leytonstone Express, Birmingham Daily Post, Glasgow Herald, Folkestone Express, Hull Daily Mail, Bournemouth Guardian, Liverpool Journal of Commerce, New York Sun, Leeds Mercury, Citizen, Times of India, Pioneer Mail, Architect, Yorkshire Post, Builder, Woodbridge Reporter, Liverpool Daily Post, Bristol Mercury, Manchester Guardian, Hereford Mercury, Newcastle Journal, Brighton Gazette, Bradford Observer, Hertfordshire Mercury, Mining Journal, City Press, Reading Mercury, Local Government Chronicle, Shields Daily News, Stockport Advertiser, Admiralty and Horse Guards Gazette, Surrey Advertiser, Local Government Journal, Weekly Free Press and Aberdeen Herald, Huddersfield Chronicle, East Essex and Halstead Times, Southampton Echo, Midland Counties Express, Fife Herald, Croydon Advertiser, Derbyshire Courier, Sanitary Record, Lisburn Standard, National Zeitung-Vorwarts (Berlin), Kent Argus, Wigan Observer, Darlington Echo, Cheltenham Mercury, &c., &c.*

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them. Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Three Months	0 7 8	Three Months	0 8 8

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

Communications, Letters, &c., have been received from—

A.—Messrs. Armour and Co., Lond.; Mons. J. Astier, Asnières, France; Aston Hall, Sutton Coldfield, Secretary of; Messrs. Allen and Hanburys, Lond.; Apollinaris Co., Lond.; A. E. P.; After care Association, Hon. Secretary of.

B.—Mr. J. H. Booth, Chesterfield; Mr. W. Bates, Lond.; Bristol Royal Hospital for Sick Children, Secretary of; Messrs. Brady and Martin, Newcastle-on-Tyne; Dr. W. H. Bourke, Lond.; T. B. Browne, Ltd., Lond.; Mr. T. Blair, Leeds; Dr. S. Basu, Kashimpore, India; Mr. J. Berry, Lond.; Mr. Charles Bingham, Lond.; Mr. E. J. Booth, Lond.; Mr. A. Benthall, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Mr. J. Paul Bush, Clifton; Dr. C. W. Buckley, Derby.

C.—Mr. H. Cripps, Lond.; City and County of Bristol, Clerk of; Mr. Watson Cheyne, Lond.; Dr. L. Corazza, Verona; Carnos, Ltd., Great Grimsby; Clifton Shakespere Society; Messrs. J. and A. Churchill, Lond.; Canadian Medical Association, General Secretary of; Dr. G. Cole-Barker, Dublin.

D.—Messrs. Davidson and Morris, Lond.; Messrs. Duncan, Flockhart, and Co., Edinburgh; Messrs. Derry and Sons, Nottingham; Mr. G. F. Darker, Lond.

E.—Mr. G. H. Edington, Glasgow; Mr. F. S. Eve, Lond.; Mr. Elliot-Blake, Lond.; Dr. J. Edmunds, Lond.

F.—Mr. A. G. R. Foulerton, Lond.; Mr. A. Flamen, Paris; Messrs. J. S. Fry and Sons, Bristol; Sir John Furley, Lond.; *Financial Times*, Lond.; Fellows Medical Manufacturing Co., Lond.

G.—Dr. H. W. Gardner, Shrewsbury; Mr. J. B. Greaves, Lond.; Mr. J. Grimshaw, Garstang; Messrs. G. Gale and Sons, Birmingham; Galignani Library, Paris; General Apothecaries' Co., Lond.; Mr. W. Grogono, Lond.

H.—Dr. J. Hawkes, Bournemouth; Messrs. Hirschfeld Bros., Lond.; Mr. Rider Haggard, Ditchingham.

I.—Messrs. Ingram and Royle, Lond.; Institut de Bibliographie, Paris; Messrs. I. Isaacs and Co., Lond.

J.—Mr. W. H. Jessop, Lond.; Mr. Vincent Jackson, Wolverhampton; Messrs. Jewsbury and Brown, Manchester; Jenner Institute for Calf Lymph, Lond.

K.—Messrs. Kemp and Co., Bombay; K. M.; Killgerm Co., Cleckheaton; Mr. Henry Kimpton, Lond.; Kidderminster Medical Society, Hon. Secretary of.

L.—Dr. C. H. Leaf, Lond.; Mr. T. Hillhouse Livingstone, Rochdale; Dr. H. S. Lunn, Lond.; London Press Exchange; Leeds General Infirmary, Manager of; *Leicester Advertiser*, Publisher of; Messrs. Love and Wyman, Lond.; London Perfumery Co., Leamington, Town Clerk of.

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N.—Surgeon-Major Nicholson, Douglas, Isle of Man; Messrs. Niblett, Sutherland, and Co., Mr. Newton Nixon, Lond.; National Provident Institution, Lond., Secretary of; G. Newnes, Ltd., Lond.; Dr. David Newman, Glasgow; National Hospital for Consumption for Ireland, Dublin; Mr. H. Needes, Lond.

O.—Ontario, Board of Health of; Messrs. Oliver and Boyd, Edinburgh.

P.—Mr. H. W. Page, Lond.; Mr. Y. J. Pentland, Edinburgh; Dr. D. R. Paterson, Cardiff; Dr. Porter, Stockport; Pathological Society of Manchester, Hon. Secretary of.

Q.—Mr. S. M. Quennell, Lond.

R.—Dr. Robertson Reid, Birkdale; Mr. E. J. Reid, Lond.; Messrs. J. Robbins and Co., Lond.; Royal Institution of Great Britain, Hon. Secretary of; Mr. H. T. Roxby, Lond.; Royal Meteorological Society, Hon. Secretary of.

S.—Dr. M. T. Simon, Singapore; Dr. H. Sewall, Denver, U.S.A.; Dr. J. R. Steen, Lond.; S. S.; Springfield House Asylum, Bedford, Medical Superintendent of; Messrs. Spiers and Pond, Lond.; Dr. B. Stewart, East Grinstead; Mr. H. M. Smith, Manchester; *St Neots Advertiser*, St. Neots; Mr. J. Startin, Lond.

T.—Mr. L. A. Tallerman, Lond.; Dr. Tirard, Lond.; Captain R. G. Turner, I.M.S., Bedford; Torquay Publishing Co.; Trafalgar Library and Typewriting Bureau, Lond.; Messrs. Thorn and Domeier, Lond.; Dr. E. Tomlinson, Chicago, U.S.A.; T. F.

U.—Mr. J. R. Upton, Lond.; University of Durham Medical Society, Newcastle-on-Tyne, Hon. Secretary of; University of London, Registrar of.

W.—Mr. J. T. C. Williams, Whitland; Messrs. J. Wright and Co., Bristol; Mr. Jason Wood, Bradford; Dr. A. Wauchope, Glasgow.

X.—X.; X., near East Dereham.

Y.—Dr. R. T. Young, Lond.; Mr. C. Yarrow, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. W. A. Anderson, Barrow-in-Furness; American Missions in Turkey, Constantinople, Treasurer of; A. P., Brighton; A. C.; Messrs. Ayrton and Saunders, Liverpool; A. B., Trowbridge.

B.—Mr. B. Bird, Blackwood; Mr. L. Birch, Ashton-on-Mersey; B. and S.; Brighton, &c., Throat and Ear Hospital, Secretary of; Messrs. Blake, Sandford, and Blake, Lond.; Mr. J. J. Butler, Carnforth; Dr. F. C. Brodie, Sandown; Dr. F. P. Bester, Portersville, Cape Colony; Mr. W. Buckton, Lond.; Mr. W. H. Brett, Morpeth; Surgeon P. W. Bassett-Smith, R.N., Lond.; Mr. E. Blatchley, Lond.

C.—Mr. J. H. Cropper, Bacup; Mr. C. Candler, Melbourne; Dr. C. C. Cox, Wentworth, New South Wales; Dr. R. H. Crowley, Bradford; C. B.; Cantab, Lond.; Messrs. A. Cohen and Co., Lond.; Mr. J. Christian, Harrogate.

D.—Dr. E. W. Diver, Shotley Bridge; Mr. D. W. Donovan, Aberdare; Messrs. Down Bros., Lond.

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—NEW YORK MEDICAL JOURNAL, Feb. 5th, 1898.

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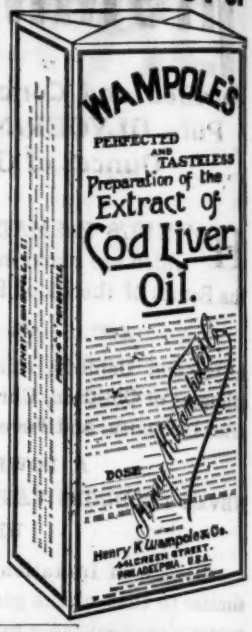

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Free from Salt.

For patients who object to "Bovril" on account of its salt flavour Doctors might order "INVALID BOVRIL," which can be obtained from any Chemist.

THE LANCET of July 22nd, 1899, says:—

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Albumen	25·09
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Crystalline Meat Principles ...	14·17
Mineral Matter	13·84
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Albumen	0·60
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Mineral Matter	0·68
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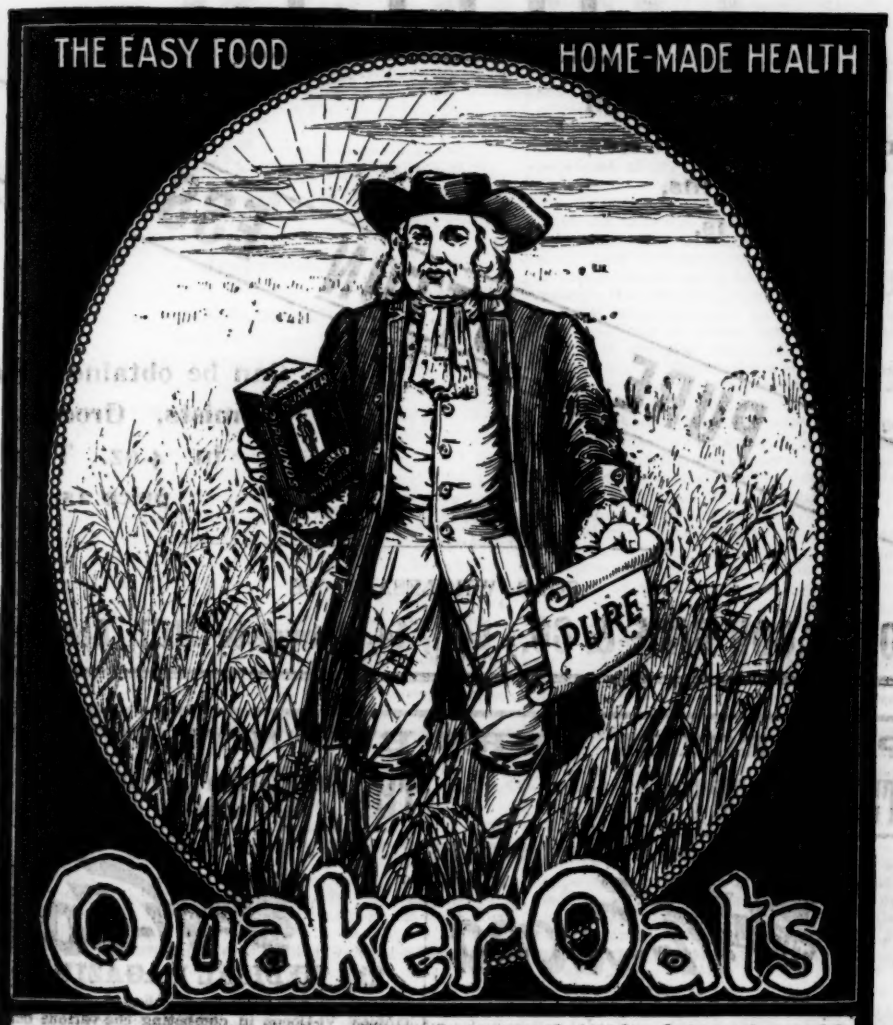

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